

**THE 1990 OREGON
OCEAN SALMON FISHERIES**

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**OREGON DEPARTMENT OF FISH AND WILDLIFE
Ocean Salmon Management**

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by

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INTRODUCTION

The Ocean Salmon Management Program (OSMP) monitors and assesses Oregon's ocean commercial and recreational salmon fisheries, processes and manages the Oregon ocean fishery and coastal data bases, coordinates Oregon coastal salmon spawning surveys, and conducts ocean and coastal stream research projects. The program uses data from these and other sources to develop management recommendations to policy makers for the best use of Oregon's salmon resources, and to evaluate proposed ocean salmon fishery regulations. Principal forums in which OSMP staff provide technical support include the Pacific Fishery Management Council (PFMC) and its salmon technical teams, the Pacific Salmon Commission (PSC) and their technical committees, and the Klamath Fishery Management Council (KFMC).

The OSMP fulfills Oregon's technical and management responsibilities to these management entities as directed under the U.S./Canada Salmon Interception Treaty (1986), the Magnuson Fishery Conservation and Management Act (MFCMA) PL 94-265 (1976), and the Anadromous Fisheries Act 89-304.

This report summarizes the activities of OSMP's Ocean Salmon Sampling Project for the 1990 ocean season. In 1990, we collected and analyzed data on catch and fishing effort, gathered average weight data from commercial salmon landings, collected chinook scales, and recovered coded-wire tags (CWT's) from salmon caught in Oregon's ocean fisheries. We also took scales from coho with CWT's to maintain a reference collection of hatchery coho scales. Special studies included the port of Newport evaluation of the extent of afternoon sport salmon ocean effort, the "late season" ocean sport fishery off Tillamook Bay, and the experimental limited entry troll chinook fishery off Coos Bay in November. The ocean sampling project also assisted in an ocean commercial troll gear selectivity study conducted by OSMP.

The OSMP sampling project is permanently staffed by a project leader (at Newport), an assistant project leader (at Newport), and two sampling coordinators (one at Coos Bay and one at Tillamook). Up to 35 seasonal aides are hired each year as port samplers. The sampling coordinators served as liaison between field samplers and Newport program staff.

Ten Oregon coastal ports were sampled in 1990, utilizing 33 seasonal samplers; of which 10 were troll, 21 were recreational, one was a "combination" sampler, and one was designated as a roving sampler and traveled the length of the coast where extra sampling was needed. Two seasonal employees helped edit and provide computer data entry of the sample data under the direction of the Data Management Project Leader and his assistant.

THE 1990 OCEAN TROLL SALMON FISHERY

BACKGROUND

The commercial salmon troll fishery was developing off the Oregon Coast by the year 1912 (Mullen, 1981). By 1919, there were between one and two thousand boats trolling off the mouth of the Columbia River. The State of Oregon began to record troll landings separately from gillnet fisheries in 1925.

Landings of ocean troll caught coho salmon remained relatively stable from 1925 to 1941, with landings in the range of 2,000,000 to 4,000,000 pounds dressed for most years (Figure 1). From 1942 to 1950 catches generally remained near 1,000,000 pounds, but by 1957, landings had climbed to 3,400,000 pounds. The severe El Nino oceanographic cycle of 1958 to 1959 resulted in landings dropping back below 1,000,000 pounds or 200,000 fish (other severe El Nino events have affected ocean productivity on several occasions most notably in 1943 and 1983). During the 1960s and early 1970s, improved hatchery production and rearing techniques, a growing troll fleet, and good survival rates of smolts to adults resulted in record landings that peaked in 1976 with 1,800,000 coho landed. The late 1970s and 1980s saw decreasing stock sizes and increasing management restrictions which combined to reduce ocean harvests to levels reminiscent of pre-hatchery days.

Although chinook harvest by the troll fishery has also seen dramatic fluctuations, the overall trend has been one of increasing landings. The two highest years of troll chinook harvest were 1987 and 1988. It is likely that much of the initial growth in the troll chinook fishery was due to a shift in harvest from coastal gillnet fisheries to ocean harvest.

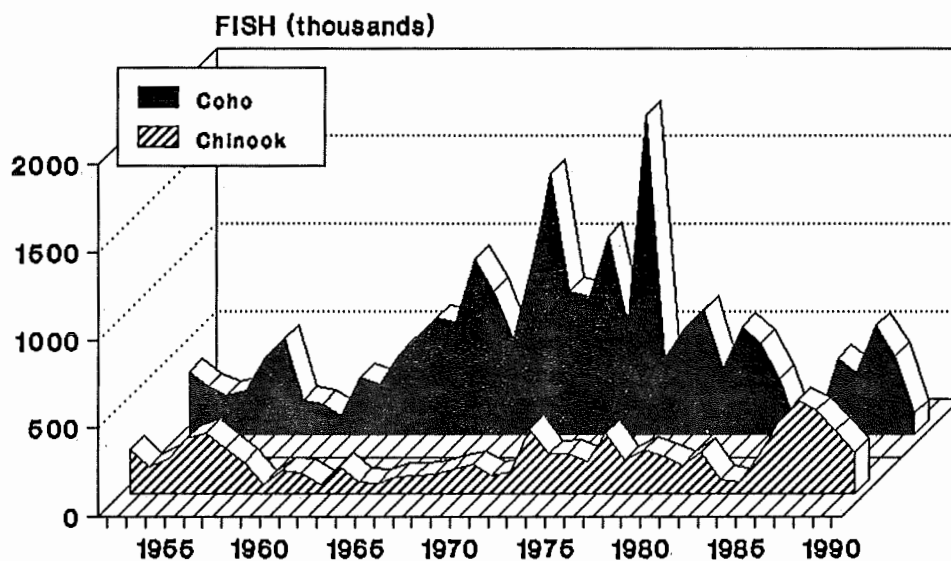
Entry into the troll fishery was unrestricted until 1980 when a permit moratorium was adopted. Although 4,311 vessels already had Oregon troll permits, a goal of 2,400 vessels licensed to troll for salmon in Oregon was established. Through permit non-use, the number of troll permits has declined to approximately 2,500 in 1990; of which approximately 2,000 vessels actually landed salmon.

SAMPLING METHODOLOGY

Sampling Areas and Staffing

For the 1990 season, a seasonal staff of 10 troll salmon samplers and 2 combination (troll/recreational) samplers was deployed at Oregon coastal ports where significant landings of troll salmon were anticipated. Samplers worked at both permanent and temporary buying stations and in Astoria, Warrenton, Hammond, Gearhart, Garibaldi, Pacific City, Newport, Florence, Winchester Bay, Charleston, Coos Bay, Port Orford, and Brookings. Troll sampling was supplemented at times by the two sampling coordinators and the assistant project leader.

TROLL SALMON LANDINGS, 1952-90 Numbers of Salmon Landed



TROLL SALMON LANDINGS, 1925-90 Pounds Dressed (head on, vicera removed)

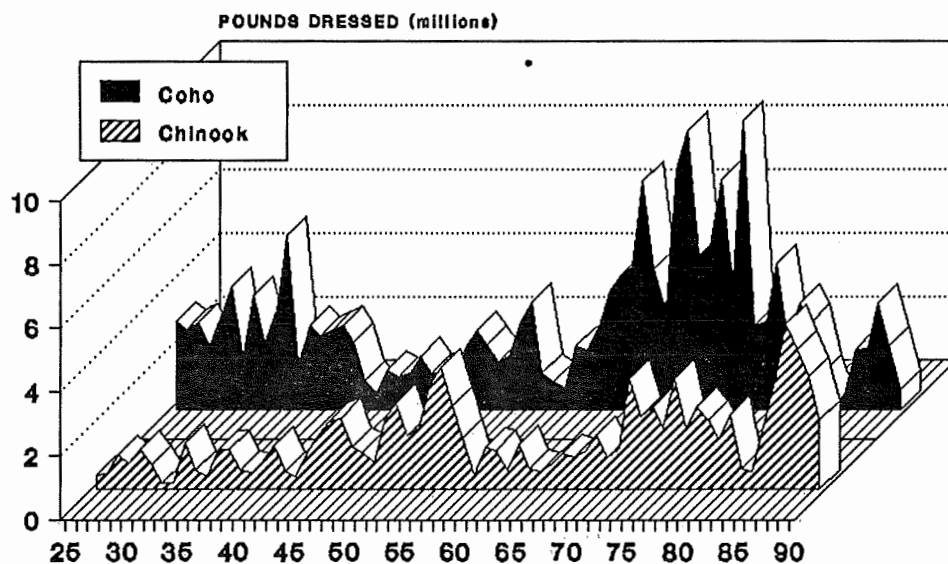


Figure 1. Historical Oregon troll salmon landings in numbers of fish (1952-90), and in pounds dressed (1925-90).

Sampling Design

Sampling was conducted in a stratified random design. Samplers were instructed to sample proportionate landings from trip boats and day boats, from landings throughout the week, and from all significant buyers in each port. Sampling data were recorded by individual vessel landings, on forms designed to be read by an optical scanner (Appendix figure 1). Buyer boats (vessels buying fish at sea directly from fishing vessels) are one exception to sampling by individual vessel landings, since they offloaded the catches from numerous vessels at one time. All individual landings are kept confidential.

Average Weights and Coded Wire Tags

OSMP employees tallied the fish by species and grade, recorded corresponding total weights, and examined the salmon for clipped adipose fins, while the salmon were being sorted and weighed by fish plant personnel. A clipped adipose fin indicated that the fish had a coded-wire tag implanted in its snout. Fishermen were interviewed to determine number of days and areas fished, snouts were collected from adipose-fin clipped salmon, and other biological sampling (scale sampling, length sampling, and specific genetic stock identification sampling) was performed at this time.

Catch sampling data and salmon snouts were collected and transferred to the Newport office on a weekly basis by the sampling coordinators. Sampling data was entered directly off the field sampling forms onto a microcomputer at the Newport office through the use of an optical scanner. Salmon snouts were later transferred to the ODFW lab at Clackamas, Oregon where the tags were removed, read, and processed.

Quota Assessment

Ocean salmon harvests within the Pacific Fishery Management Council area are managed to achieve specific spawning escapement goals for critical regional wild salmon stocks, and provide for inriver fisheries. A primary tool of ocean managers is to set quotas or harvest ceilings for specific areas and time periods based on estimates of adult recruitment, stock mix, anticipated ocean harvest patterns, and desired spawning escapement needs.

Estimates of commercial harvest are derived by taking poundages from fish receiving tickets (a fish receiving ticket is required for each landing of troll salmon), and applying average weight data from our port sampling program to reach an estimate of the number of salmon landed. Intensive ocean troll fisheries and quotas make it necessary for managers to be able to constantly monitor catches in a timely manner and with reasonable accuracy. Standard processing of fish ticket data requires two to three weeks for assessment, and cannot be effectively used for inseason quota management.

To overcome the fish ticket time lag, the OSMP developed a "key buyer program" in 1983. This program monitors daily or periodic troll landings at major "key" buyers along the coast as needed to provide assessment of landings. Sampling staff contact major salmon buyers in each port and summarize total pounds of salmon purchased for a specific time period and fishery. The sampler then contacts OSMP staff at the Newport office with the poundages, and the summarized sample data for the same time period. Total poundages landed at the key buyers are expanded to account for the buyers who were not contacted. By dividing

estimated poundages of salmon landed within a given port by the average weight from the sampling data for that port, a reasonable estimate of landings can be made within 24 hours of the actual catch. Key buyers typically represent more than 90% of the landings, and permit for expansion of the landings with minimal error.

Estimates are also made of fish "on the water", and buyer percentages are adjusted in season to reflect current delivery patterns. As "hard data" from the fish ticket system became available, it was used to replace the early key buyer "soft data".

REGULATIONS

Ocean salmon regulations are set by the Pacific Fishery Management Council for all ocean salmon fisheries from 3 to 200 miles, and are approved for 0 to 3 miles by the Oregon Fish and Wildlife Commission. Special all-species-except-coho troll fisheries are allowed to be set by the Oregon Fish and Wildlife Commission for waters within 3 miles of shore.

All 1990 Oregon ocean troll salmon fisheries had the requirement of single-point, single-shank, barbless hooks. Minimum length restrictions (expressed as the total length of the fish) were 28 inches for chinook caught north of Cape Falcon, 26 inches for chinook caught south of Cape Falcon, 16 inches for coho caught north of Humbug Mountain, and 22 inches for coho caught south of Sisters Rocks. Several fisheries had inseason closures and reopenings, season extensions, and adjustments to landing limits in attempts to closely approximate quotas (Figure 2; Appendix Table 1).

North of Cape Falcon

The area from Cape Falcon north to the US/Canada border opened for all species except coho on May 1 and was scheduled to run through June 15 or the quota of 26,100 chinook. The fishery was actually open during the time periods of May 1 through 14, May 18 through 27, May 31 through June 2, June 8 through 11, and June 14 (32 fishing days). Vessels were required to land and deliver fish within 48 hours of any closure, and were required to notify the Newport office of the Oregon Department of Fish and Wildlife of any landings south of Cape Falcon .

A second season north of Cape Falcon to the US/Canada border was open August 18 through 21, and August 25 through 26 (6 fishing days). This all species fishery had a restriction of 20 chinook and 200 coho per vessel per open period. All salmon were required to be landed in this area or in adjacent closed areas. This fishery had a chinook guideline of 8,400 fish, and a coho quota of 82,000 fish.

The final 1990 troll season north of Cape Falcon that included Oregon waters, was open from Cape Falcon to Leadbetter Point. This season was open from August 30 through September 14, September 18 through 19, and September 22 through October 14 (42 fishing days). A single daily landing limit of 50 coho plus one coho for each chinook was in effect through September 19, and changed to 100 coho per single daily landing from September 22 through the remainder of the fishery. There was an initial coho quota for this fishery of 20,000 fish, but was increased to 24,600 fish after a series of quota rollovers and transfers.

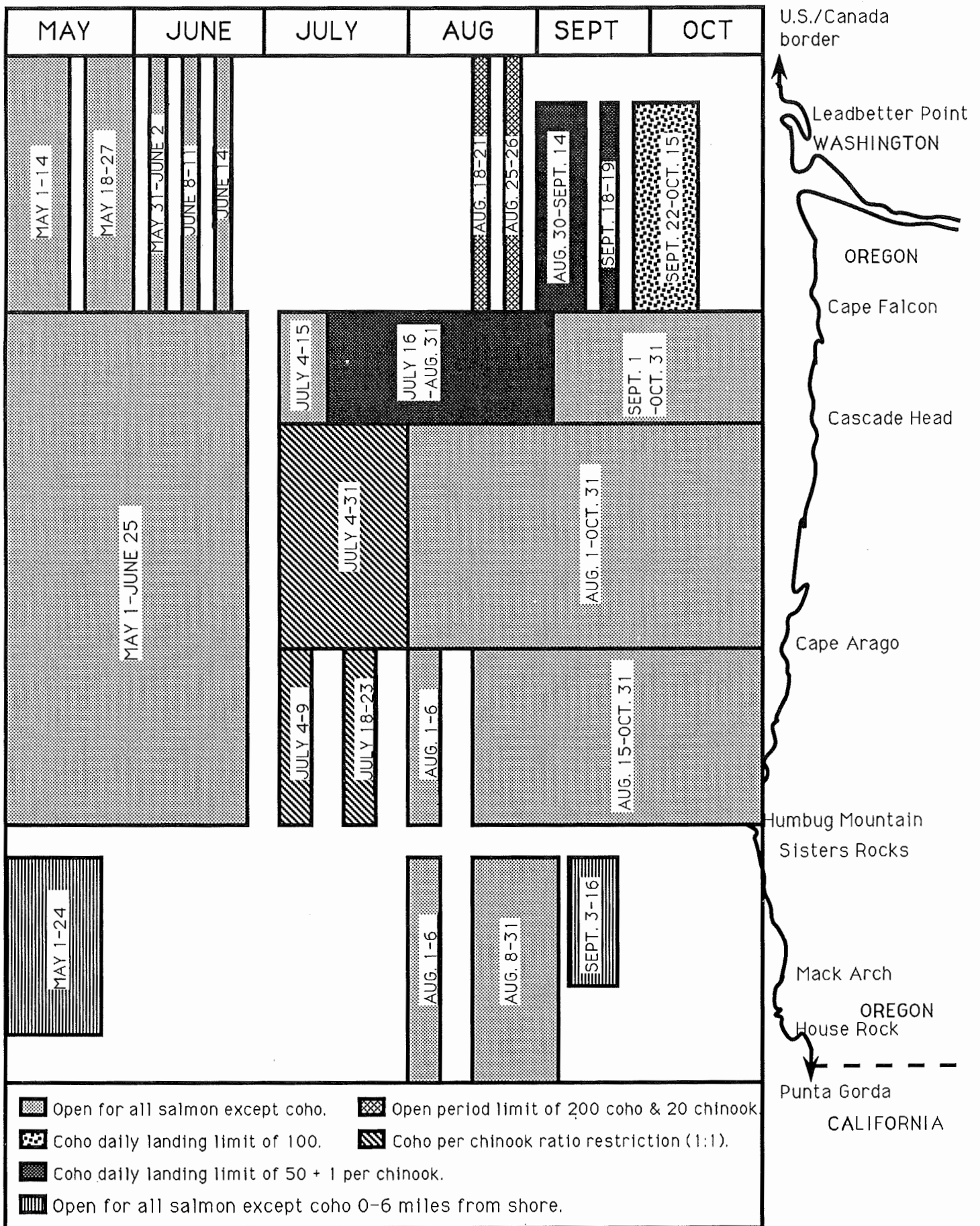


Figure 2. Open troll salmon seasons off Oregon, 1990.

The chinook guideline for this fishery was 2,000 fish. All salmon caught in this area were required to be landed in this area or in an adjacent closed area.

The Columbia River Conservation Zone was closed to all salmon fishing in 1990. The conservation zone is defined as follows: The area within a line extending 6 nautical miles due west from North Head along 46°18'00"N to 124°13'18"W, then southerly to the Columbia River Buoy (46°11'06"N, 124°11'00"W), then northeast along the Red Buoy Line to the tip of the Columbia River south jetty (see Figure 10).

Cape Falcon to Cascade Head

The all-species-except-coho fishery from Cape Falcon to Cascade Head was open from May 1 through June 25, July 4 through 15, and September 1 through October 31 (125 fishing days). There were no chinook quotas from Cape Falcon to Humbug Mountain.

The all species fishery from Cape Falcon to Cascade Head was open from July 16 through August 31 (47 fishing days). This fishery had a single daily landing limit of 50 coho plus one coho for each chinook landed. The coho catch quota for this fishery was included in the 167,000 coho allocated for troll landings from Cape Falcon to the US/Mexico border. If catches had reached 65,000 coho, they would have triggered a shift from the daily landing restriction to a ratio fishery of one coho per chinook; however, extremely slow coho catches kept landings well below the trigger. All chinook in possession were required to be delivered with the coho. Mixed loads of coho and chinook, and coho only loads were required to be delivered in this area; in adjacent closed areas; or between Cascade Head and Humbug Mountain, if the load met the landing requirement of that area.

Cascade Head to Humbug Mountain

The all species except coho fishery between Cascade Head and Humbug Mountain was open from May 1 through June 25, and from August 1 through October 31 (148 fishing days). There were no chinook quotas in this area, although several time/area restrictions were in effect due to regional management for Klamath River, California fall chinook stocks (Figure 2). In order to reduce impacts on Klamath River fall chinook stocks, the subarea from Cape Arago to Humbug Mountain was closed to salmon fishing July 10 through 17, July 24 through 31, and August 7 through 14 (24 days of closures).

The all species fishery was open from July 4 through 31 (28 fishing days), and had a ratio restriction of not more than one coho per chinook. In order to reduce waste there was a provision that allowed the landing of a single coho per day if no chinook were landed. All chinook were required to be delivered with the coho, and all mixed loads were required to be delivered in this area or in adjacent closed areas. The coho landed in this area counted against the 167,000 fish quota, and there was a subarea ceiling of 97,000 coho for the area south of Cascade Head. A 5,000 coho reserve was allocated to the fishery south of Horse Mountain.

Humbug Mountain to Sisters Rocks

The area from Humbug Mountain to Sisters Rocks was designated as a buffer zone, and no commercial salmon fishing was allowed in this area in 1990.

Sisters Rocks to Punta Gorda (Klamath Management Zone)

Within the Klamath Management Zone (KMZ), the subarea of Sisters Rocks to House Rock within 6 miles of shore was scheduled to be open for all salmon except coho May 1 through 14. The season was extended through May 24 (24 fishing days) when it became obvious that the quota of 6,200 chinook would not be caught. This fishery is designed to target on returning Rogue River spring chinook. All salmon were required to be landed in the KMZ.

The all salmon except coho season for the KMZ had an initial quota of 12,200 chinook, but this was increased to 18,300 when chinook remaining from the earlier quota were rolled over to this season. This fishery was scheduled to run from August 1 through 6, and August 15 through 31; but the second half of the season was extended by opening on August 8 (30 fishing days). All salmon were required to be landed in the KMZ.

The final 1990 Oregon troll fishery in the KMZ, was in the subarea of Sisters Rocks to Mack Arch within 6 miles of shore. This was an all species except coho fishery with a quota of 7,500 chinook, and was open September 3 through 16 (14 fishing days). All salmon were required to be landed in the KMZ. This fishery was designed to target on returning Rogue River fall chinook.

EFFORT AND CATCH STATISTICS

Effort and catch statistics for the 1990 Oregon troll salmon fishery are preliminary. Poundages, dollar value, area of catch, and days fished were obtained directly from commercial fish receiving tickets. Pounds landed were converted to number of fish by using average weight information collected by port samplers. Prior to 1979, all Oregon troll catch statistics were reported by port of landing. Beginning in 1979, catch and effort estimates have also been reported by ocean catch area (Figure 3). Landings are allocated to correct catch areas in order to properly assess ocean fishery impacts. Area of catch data are recorded on fish tickets by buyers, and are cross-checked with available OSMP sampling data.

Data by port of landing are reported on a port area format that aggregates the ports in order to correspond to the catch areas in Figure 3. The Astoria area includes the Astoria-Warrenton-Hammond complex as well as dory landings at Gearhart and Cannon Beach. The Tillamook area includes landings in Nehalem, Garibaldi, Netarts, and Pacific City. The Newport area includes landings at Depoe Bay, Newport, and Waldport. The Coos Bay area includes landings in Florence, Winchester Bay, Coos Bay/Charleston, Bandon, and for the first time Port Orford. The southern boundary for the Coos Bay area was changed in 1990 from the Port Orford Reef Red Buoy to Humbug Mountain, and now includes Port Orford. The Brookings area includes the ports of Gold Beach and Brookings.

Effort

Historically, Oregon's troll effort has been estimated in vessel deliveries, and since 1979 in boat days. Troll effort for 1990 totaled 25,900 boat days, 39% below the 1989 level of 42,300 boat days, and only half of the 1988 record of 51,100 boat days (Table 1). Reduced effort levels were the result of low coho quotas that were in effect in 1990 (no directed coho fishery south of Cascade Head), lowered chinook and coho abundance, and poor catch rates.

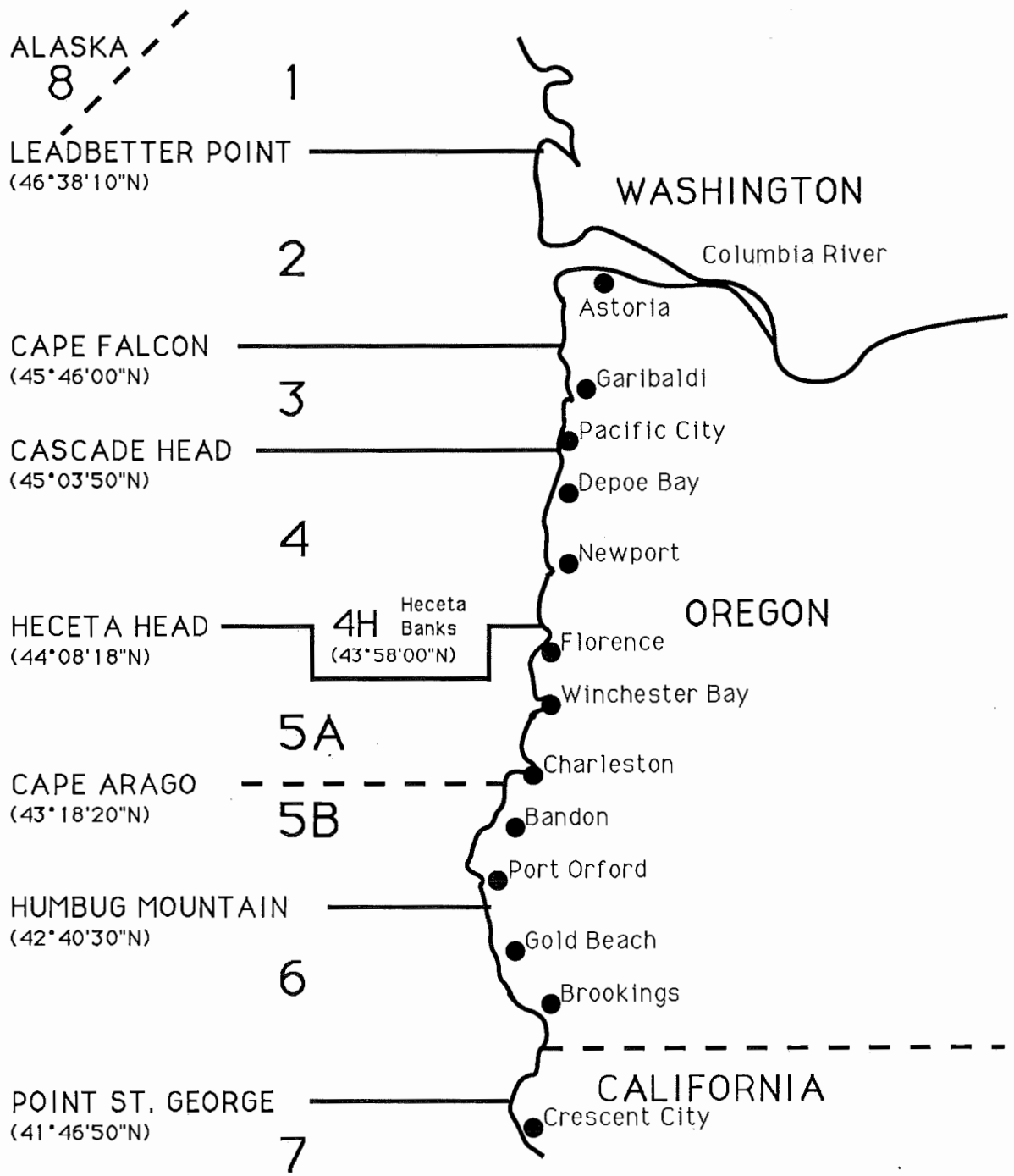


Figure 3. Catch areas and major ports where commercial troll salmon sampling is performed. Additional minor ports are sampled as needed.

Effort

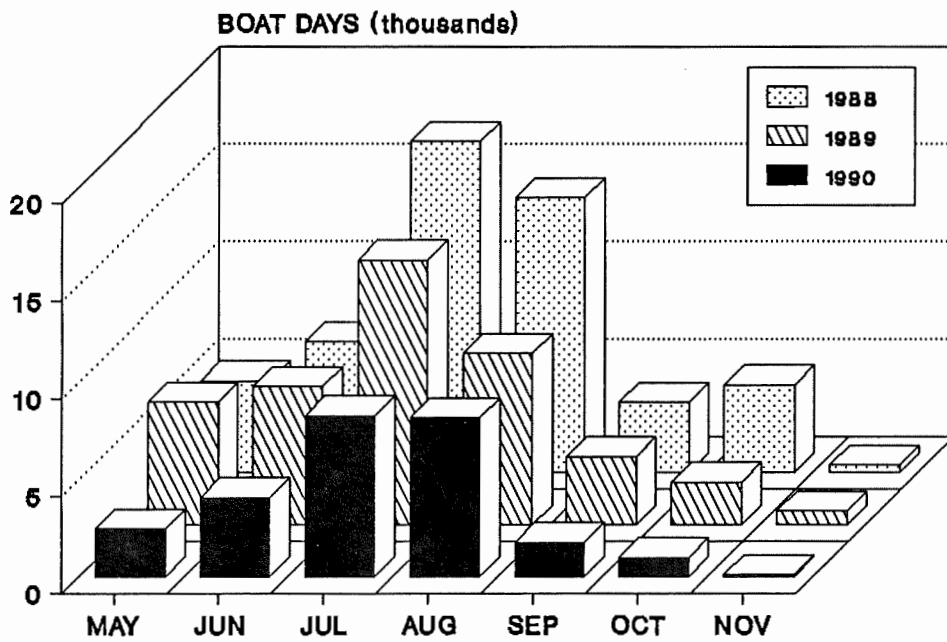
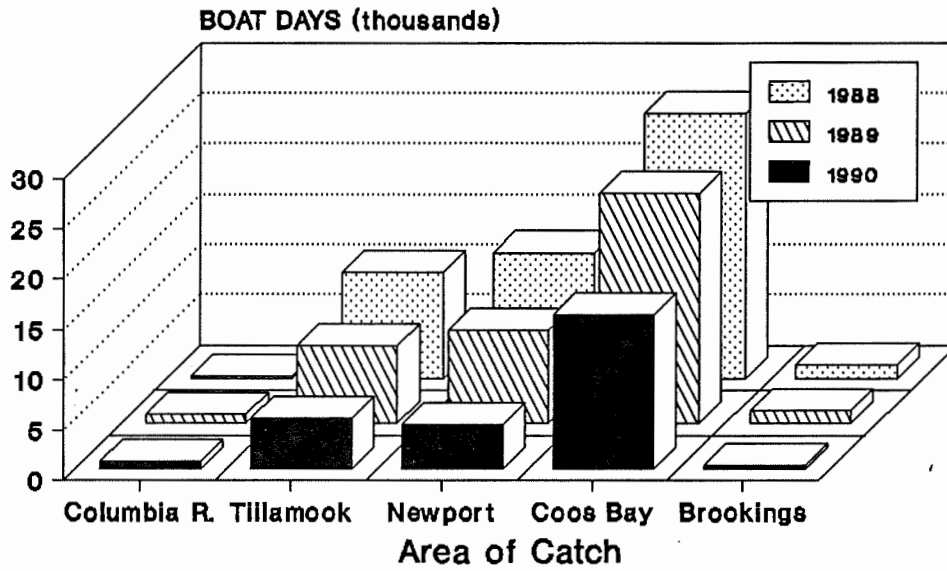


Figure 4. Oregon troll salmon effort in boat days by area of catch and by month, 1988-90.

Table 1. Oregon commercial troll salmon effort and landings in number of fish and pounds dressed, 1979-90^a.

Year	Effort (boat days)	Chinook		Coho		Pinks	
		No.	lbs dr.	No.	lbs dr.	No.	lbs dr.
1979	48,800	245,500	2,580,000	714,600	4,586,300	20,500	106,300
1980	39,900	209,400	2,171,500	383,300	2,190,200	300	1,600
1981	45,200	160,400	1,573,400	620,300	3,324,300	60,200	324,000
1982	33,900	232,600	2,351,300	523,500	2,708,400	0	0
1983	22,200	79,600	655,500	319,700	1,097,900	<100	200
1984	7,900	64,300	549,900	14,000	71,000	0	0
1985	21,100	216,600	2,030,300	84,100	483,800	44,900	258,600
1986	32,500	403,100	3,370,400	440,500	1,905,100	<100	<100
1987	39,600	529,500	5,182,400	354,000	1,915,900	17,600	87,300
1988	51,100	469,700	4,384,800	623,100	3,335,900	<100	<100
1989	42,300	353,400	3,531,900	455,700	1,995,500	3,800	17,600
1990	25,900	232,500	2,180,600	122,000	633,600	0	0

^a Includes minor catches made off California, Washington and Alaska and landed in Oregon.

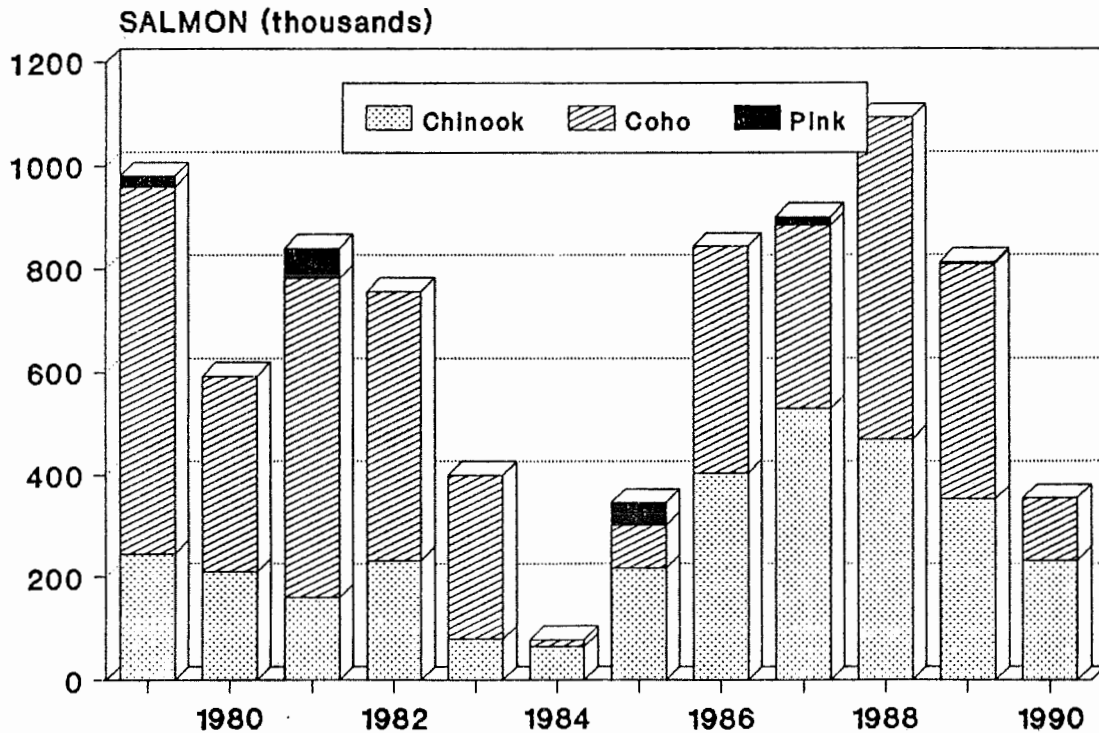


Figure 5. Oregon troll salmon landings, 1979-90.

Most 1990 fishing effort (59%) occurred within the Coos Bay area (Figure 4 and Appendix Table 2). Effort declined from 1989 levels in all areas, but most notably in the Newport area (47%) and the Brookings area (31%).

As usual, peak effort coincided with the general all species salmon fishery in most areas. For the Tillamook, Newport, and Coos Bay areas this was during July and August (Table 2 and Appendix Table 3). In the Astoria area, limited seasons and a late all species opener resulted in most effort occurring in August and September. The Brookings area had no coho fishery in 1990, and most of the effort coincided with the KMZ general season opener in August.

Landings

Chinook: The 1990 chinook landings were 34% below 1989 catches, and 14% below the 1979-89 average of 269,500 chinook (Table 1, Figure 5). A total of 232,500 chinook were landed in 1990 in Oregon as compared to 353,400 in 1989.

Most of the chinook landings (75%) were caught in the Coos Bay area (Table 2; Figure 6). Catches were down in all areas when compared to 1989. The Brookings area had the largest relative drop in chinook landings with an 86% decline. This decline was primarily due to reduced chinook abundance and quotas within the KMZ, boundary changes within catch area #6, and poor chinook catch rates in all KMZ chinook seasons.

Monthly landings of chinook peaked in July, and remained strong in August; July and August accounted for 74% of the 1990 chinook landings (Tables 2 and 3; and Appendix Table 3). Chinook catches in the Newport area peaked in June with 41% of the catch landed.

Coho: Oregon coho landings during the 1990 season were 73% below 1989 landings (Figure 5, Table 1), and 70% below the 1979-89 average of 412,100. Only 122,000 coho (633,000 pounds dressed weight) were landed in 1990 compared to deliveries of 455,700 coho (1,995,500 pounds) in 1989. The Tillamook catch area had the highest 1990 troll coho landings, with 44% of the harvest.

Due in large part to reduced coho stock abundance and extensive ratio (one coho allowed per chinook landed) and/or daily landing restrictions, 1990 coho catches were down in all areas. The sharpest declines came in the Newport area where the catch was 90% below 1989 levels, and the Brookings area which had no open coho season in 1990 (Figure 7 and Appendix Table 2).

Similar to recent years, July and August accounted for 95% of the 1990 coho landings. The fishery from Cape Falcon to Leadbetter Point, Washington was shaped to provide fishing opportunity for smaller day trollers. The results of this season shaping were late season coho landings in this area that extended into October for the first time since 1978.

AVERAGE WEIGHT DATA

Average ocean troll salmon weight data was gathered from most port landing locations by the sampling program and allowed for the conversion of fish ticket poundage information to numbers of fish. The seasonal average dressed weight (head on, viscera removed) for chinook was 9.4 pounds (Table 4). This was down slightly from the 1989 average weight of 10.0 pounds.

Table 2. Oregon troll salmon effort and landings, number of fish by area of catch and by statistical month, 1990.

Year	Area of Catch						Alaska 8	Wash. 1	Calif. 7	Total
	Col. R. 2	Tillamook 3	Newport 4	Coos Bay 5	Brookings 6	OR Subtotal				
<u>EFFORT (Boat Days)</u>										
May	100	100	500	2,200	<50	2,800	0	<50	<50	2,900
June	<50	100	1,400	2,200	-	3,700	0	0	0	3,700
July	-	1,600	1,600	5,100	-	8,300	0	0	<50	8,300
August	300	2,300	600	4,700	300	8,200	0	<50	0	8,200
September	300	600	200	700	<50	1,800	0	0	0	1,800
October	<50	500	100	400	0	1,000	0	0	0	1,000
November	0	0	0	<50	0	<50	0	0	0	<50
Total	700	5,100	4,400	15,300	400	25,900	0	100	<50	25,900
<u>Chinook</u>										
May	500	400	2,500	12,100	100	15,600	0	300	<50	15,800
June	100	400	16,600	15,500	0	32,700	0	0	0	32,700
July	0	5,400	15,400	79,900	0	100,700	0	0	<50	100,700
August	700	2,400	4,900	60,200	2,200	71,000	0	<50	0	71,100
September	1000	1,800	600	4,600	100	8,000	0	0	0	8,000
October	100	1,200	800	2,100	0	3,900	0	0	0	3,900
November	0	0	0	<50	0	<50	0	0	0	<50
Total	2,200	12,400	40,800	174,400	2,300	232,200	0	300	<50	232,500
<u>Coho</u>										
July	-	23,100	13,400	40,400	-	76,900	0	0	<50	76,900
August	5,400	30,100	500	2,600	-	38,700	0	900	0	39,500
September	5,200	-	-	-	-	5,200	0	0	0	5,200
October	300	-	-	-	-	300	0	0	0	300
Total	10,900	53,200	14,000	43,000	-	121,100	0	900	<50	122,000

Table 3. Oregon troll salmon landings in pounds dressed, by calendar month and area of landing, 1990.

Month	Area of Landing					Total
	Astoria	Garibaldi to Pacific City	Depoe Bay to Waldport	Florence to Bandon	Port Orford to Brookings	
<u>Chinook</u>						
May	6,226	4,018	24,157	110,571	992	145,964
June	1,171	4,828	164,792	160,230	219	331,240
July	1,031	52,065	148,271	765,494	30,264	997,125
August	6,975	28,333	37,711	462,109	26,220	561,348
September	11,812	24,630	6,611	42,551	1,282	86,886
October	883	25,104	6,214	25,596	117	57,914
November	-	-	-	158	-	158
Total	28,098	138,978	387,756	1,566,709	59,094	2,180,635
<u>Coho</u>						
July	2,342	126,634	72,546	213,769	4,966	420,257
August	30,757	143,828	62	1,704	-	176,351
September	33,158	1,041	-	-	-	2,177
October	2,177	-	-	-	-	2,177
Total	68,434	271,503	72,608	215,473	4,966	632,984

Chinook

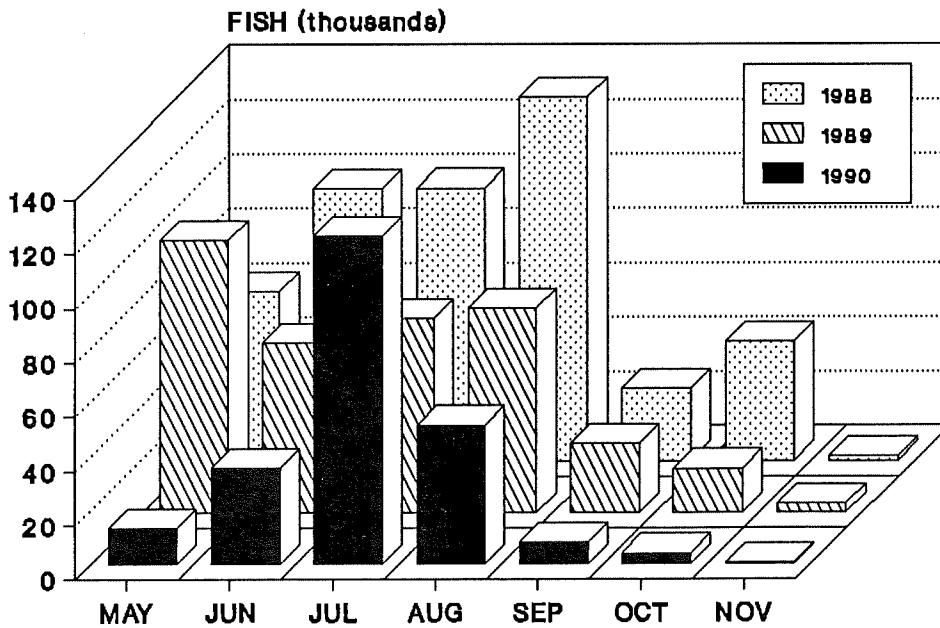
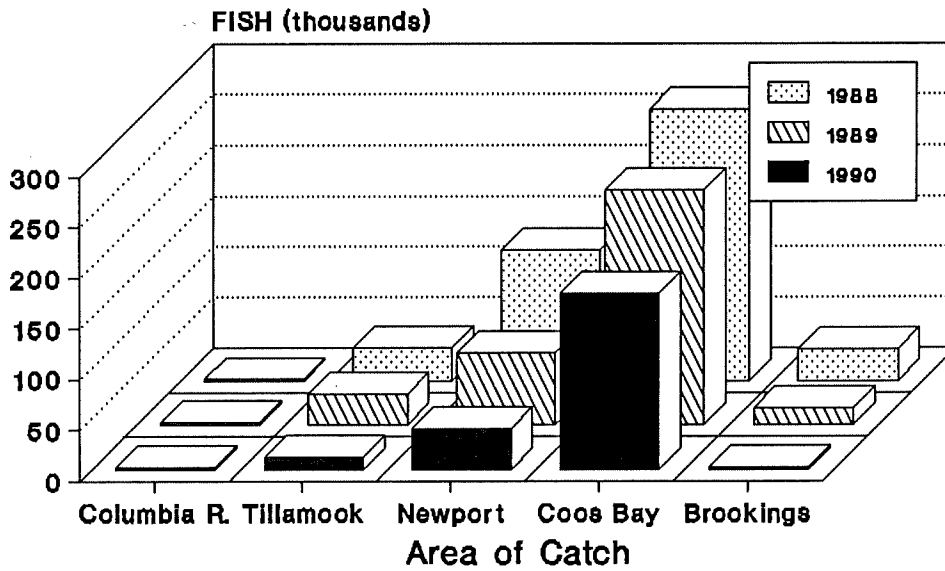


Figure 6. Oregon troll chinook landings by area of catch and by month, 1988-90.

Coho

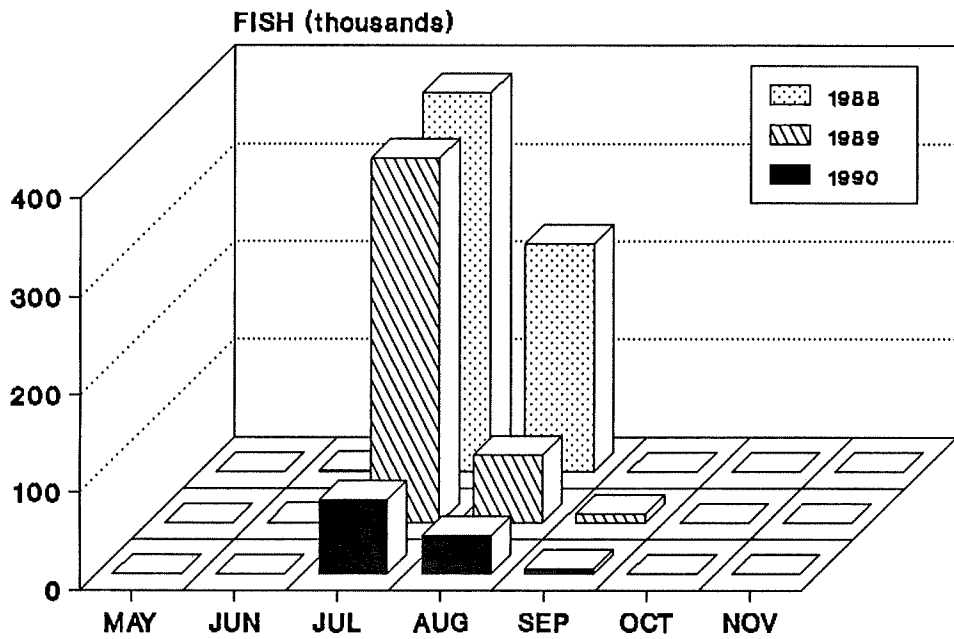
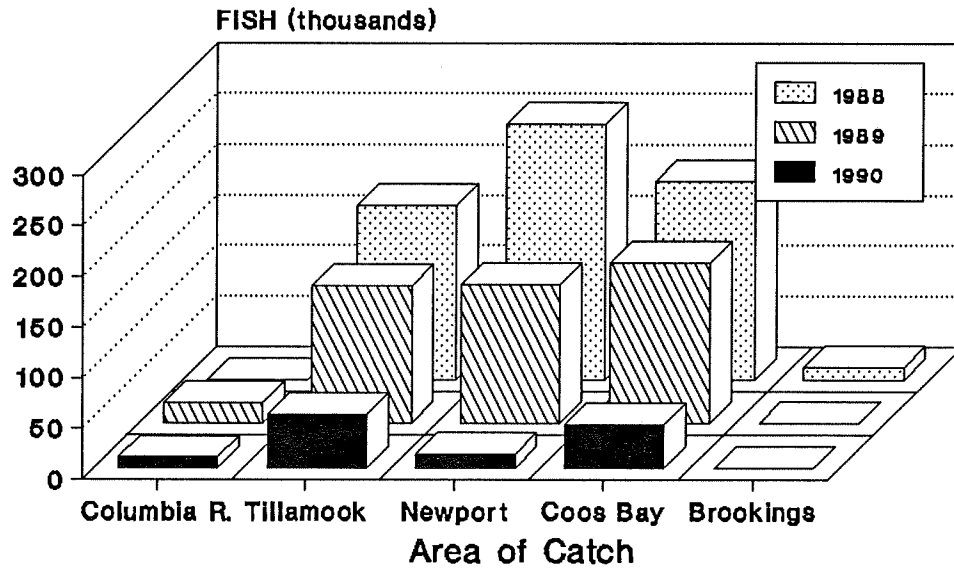


Figure 7. Oregon troll coho landings by area of catch and by month, 1988-90.

Table 4. Observed average dressed weight and calculated number of chinook landed in the Oregon troll fishery by calendar month and area of landing, 1990.

Area of Landing	Month							Total
	May	June	July	Aug.	Sept.	Oct.	Nov.	
<u>Astoria-</u>								
<u>Cannon Beach</u>								
Numbers	585	114	116	600	1,056	63	-	2,534
Pounds	6,226	1,171	1,031	6,975	11,812	883	-	28,098
Ave. wt.	10.6	10.3	8.9	11.6	11.2	14.0	-	11.1
<u>Nehalem Bay-</u>								
<u>Pacific City</u>								
Numbers	461	437	5,620	2,735	1,866	1,229	-	12,348
Pounds	4,018	4,828	52,065	28,333	24,630	25,104	-	138,978
Ave. wt.	8.7	11.0	12.2	10.4	13.2	20.4	-	11.2
<u>Salmon River-</u>								
<u>Waldport</u>								
Numbers	2,495	16,329	15,240	4,300	708	779	-	39,851
Pounds	24,157	164,792	148,271	37,711	6,611	6,214	-	387,756
Ave. wt.	9.7	10.1	9.7	8.8	9.3	8.0	-	9.7
<u>Florence-</u>								
<u>Port Orford</u>								
Numbers	11,858	16,087	81,937	54,214	5,224	2,112	15	171,447
Pounds	110,571	160,230	765,494	462,109	42,551	25,596	158	1,566,709
Ave. wt.	9.3	10.0	9.3	8.5	8.1	12.1	10.5	9.1
<u>Gold Beach-</u>								
<u>Brookings</u>								
Numbers	81	21	3,128	2,886	155	18	-	6,289
Pounds	992	219	30,264	26,220	1,282	117	-	59,094
Ave. wt.	12.2	10.4	9.7	9.1	8.3	6.5	-	9.4
<u>Total</u>								
Numbers	15,480	32,988	106,030	64,735	9,009	4,201	15	232,469
Pounds	145,964	331,240	997,125	561,348	86,886	57,914	158	2,180,635
Ave. wt.	9.4	10.0	9.4	8.7	9.6	13.8	10.5	9.4

The average dressed weight for troll coho for the 1990 season was 5.2 pounds (Table 5). Coho average weight was up slightly from the 1989 average of 4.4 pounds.

THE DOLLAR VALUE OF OCEAN SALMON LANDINGS

The 1990 Oregon troll chinook landings were worth \$5,453,000 (ex-vessel value) to the fishermen, and was the lowest chinook value since 1985 and reflected the reduced catch levels. The average price paid was \$2.50 per pound, a 13% increase over 1989. Troll coho landings in 1990 also had the lowest ex-vessel dollar value since 1985, bringing only \$1,008,000 to the fishermen. The average price for coho was \$1.59 per pound; up 50% from the 1989 level (Appendix Table 4).

CODED WIRE TAG SAMPLING

In 1990, the troll sampling program examined 27% of all landed chinook and 29% of all coho for coded wire tags (Tables 6 and 7).

Chinook

Samplers observed 3,031 marked (adipose fin clip) chinook in 1990 (4.8% mark rate). Technicians recovered readable tags from 2,717 snouts (90%). Most of the tag recoveries were released by Oregon Department of Fish and Wildlife (48%), and California Department of Fish and Game (38%) (Figure 6). Most of the recovered tags were released in the Columbia River (30%), followed by the Sacramento River (25%), Oregon coastal rivers (primarily the Elk and Chetco rivers) (18%), and the Klamath River (16%) (Figure 8).

Coho

Samplers observed 1,642 marked coho in 1990 (4.6% mark rate). Technicians recovered readable tags from 1,352 snouts (82%). Most of the tag recoveries were from fish tagged and released by Oregon Department of Fish and Wildlife (61%), Oregon private hatcheries (24%), and Washington Department of Fisheries (11%) (Figure 9). Most of the recovered tags were from releases in the Columbia River (45%), Oregon private hatcheries (25%), Oregon coastal rivers (14%), and Washington coastal rivers (7%) (Figure 9).

NOTE: The above information cannot be used to estimate stock contribution since tagging is not representative of stocks. Most stocks of wild fish have no tagging programs or population estimators associated with them.

SPECIAL FISHERIES AND STUDIES

In recent years OSMP has monitored several special fisheries and performed or assisted in several special studies. Examples would include: terminal area troll fisheries around the mouth of the Elk and Sixes Rivers, an at sea evaluation of May/June coho hooking mortality in the troll fishery, and collection of tissue samples for genetic stock evaluation of PFMC area fisheries. In 1990, OSMP participated in an at sea study to analyze the

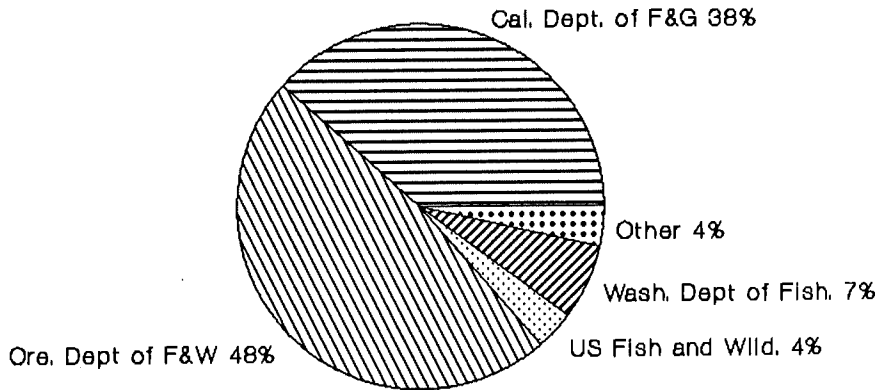
Table 5. Observed average dressed weight and calculated number of coho landed in the Oregon troll fishery by calendar month and area of landing, 1990.

Area of Landing	July	August	September	October	Total
<u>Astoria-Cannon Beach</u>					
Numbers	500	5,785	6,043	304	12,632
Pounds	2,342	30,757	33,158	2,177	68,434
Ave. wt.	4.7	5.3	5.5	7.2	5.4
<u>Nehalem Bay-Pacific City</u>					
Numbers	25,267	26,994	184	-	52,445
Pounds	126,634	143,828	1,041	-	271,503
Ave. wt.	5.0	5.3	5.6	-	5.2
<u>Salmon River-Waldport</u>					
Numbers	13,139	10	-	-	13,149
Pounds	72,546	62	-	-	72,608
Ave. wt.	5.5	6.2	-	-	5.5
<u>Florence-Port Orford</u>					
Numbers	42,392	337	-	-	42,729
Pounds	213,769	1,704	-	-	215,473
Ave. wt.	5.0	5.0	-	-	5.0
<u>Gold Beach-Brookings</u>					
Numbers	999	-	-	-	999
Pounds	4,966	-	-	-	4,966
Ave. wt.	5.0	-	-	-	5.0
<u>Total</u>					
Numbers	82,297	33,126	6,227	304	121,954
Pounds	420,257	176,351	34,199	2,177	632,984
Ave. wt.	5.1	5.3	5.5	7.2	5.2

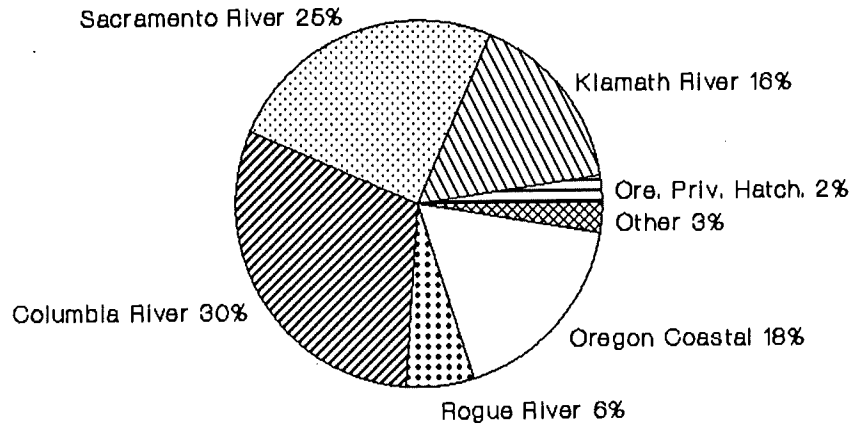
Table 6. Oregon ocean troll chinook mark sampling by statistical month and area of landing, 1990.

Area of Landing	Month							Total
	May	June	July	Aug.	Sept.	Oct.	Nov.	
<u>Astoria</u>								
<u>Cannon Beach</u>								
No. Examined	122	0	0	231	234	0	-	587
No. Landed	585	114	116	739	917	63	-	2,534
% Examined	21	0	0	31	26	0	-	23
No. Marks	5	0	0	14	20	0	-	39
<u>Nehalem Bay-</u>								
<u>Pacific City</u>								
No. Examined	48	125	1,312	829	285	258	0	2,857
No. Landed	462	436	5,322	3,104	1,795	1,210	19	12,348
% Examined	10	29	25	27	16	21	0	23
No. Marks	2	12	85	37	14	17	0	167
<u>Salmon River-</u>								
<u>Waldport</u>								
No. Examined	544	5,458	5,865	1,210	91	89	0	13,257
No. Landed	2,585	16,239	14,775	4,831	642	658	121	39,851
% Examined	21	34	40	25	14	14	0	33
No. Marks	25	295	315	58	2	5	0	700
<u>Florence-</u>								
<u>Port Orford</u>								
No. Examined	3,622	4,656	20,677	13,651	319	424	7	43,356
No. Landed	12,103	15,842	77,354	59,510	4,511	1,960	167	171,447
% Examined	30	29	27	23	7	22	4	25
No. Marks	210	244	925	516	11	99	1	2,006
<u>Gold Beach-</u>								
<u>Brookings</u>								
No. Examined	38	0	956	1,930	133	0	-	3,057
No. Landed	81	21	3,128	2,888	153	18	-	6,289
% Examined	47	0	30	67	87	0	-	49
No. Marks	1	0	48	64	6	0	-	119
<u>Total</u>								
No. Examined	4,374	10,239	28,810	17,851	1,062	771	7	63,114
No. Landed	15,816	32,652	100,695	71,072	8,018	3,909	307	232,469
% Examined	28	31	29	25	13	20	2	27
No. Marks	243	551	1,373	689	53	121	1	3,031

RELEASE AGENCY



BASIN OF RELEASE



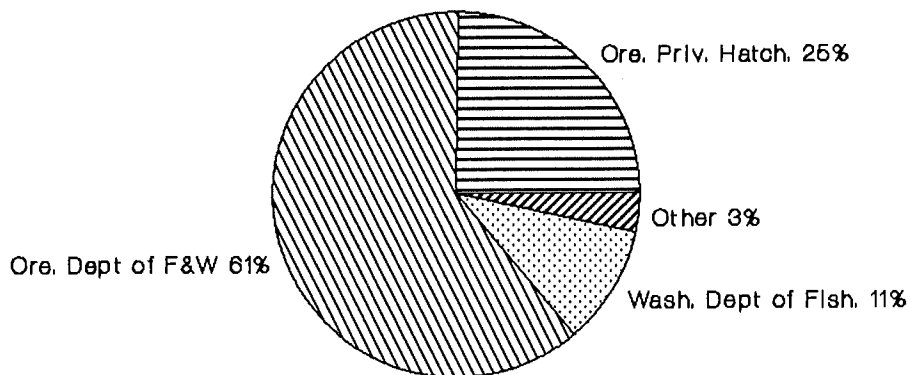
NOTE: Does not represent stock contribution rates, since tagging is not representative of all stocks.

Figure 8. Observed recoveries of chinook coded wire tags from Oregon troll salmon landings by release agency and by basin of release, 1990.

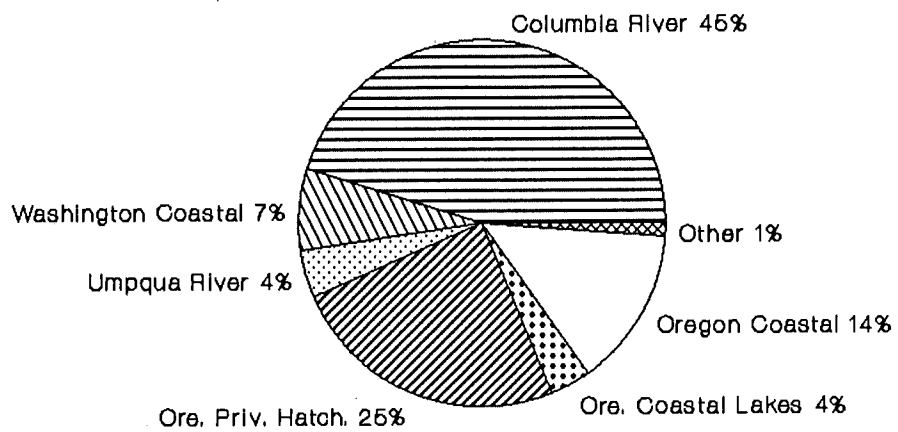
Table 7. Oregon troll coho mark sampling by statistical month and area of landing, 1990.

Area of Landing	Month				Total
	July	Aug.	Sept.	Oct.	
<u>Astoria-Cannon Beach</u>					
No. Examined	0	2,118	1,501	0	3,619
No. Landed	500	6,829	4,999	304	12,632
% Examined	0	31	30	0	29
No. Marks	0	71	61	0	132
<u>Nehalem Bay-Pacific City</u>					
No. Examined	6,006	8,441	0	0	14,447
No. Landed	22,712	29,568	165	0	52,445
% Examined	26	28	0	0	28
No. Marks	237	415	0	0	652
<u>Salmon River-Waldport</u>					
No. Examined	5,089	251	-	-	5,340
No. Landed	12,741	408	-	-	13,149
% Examined	40	62	-	-	41
No. Marks	242	15	-	-	257
<u>Florence-Port Orford</u>					
No. Examined	10,667	990	-	-	11,657
No. Landed	39,986	2,743	-	-	42,729
% Examined	27	36	-	-	27
No. Marks	532	49	-	-	575
<u>Gold Beach-Brookings</u>					
No. Examined	337	-	-	-	337
No. Landed	999	-	-	-	999
% Examined	34	-	-	-	34
No. Marks	20	-	-	-	20
<u>Total</u>					
No. Examined	22,099	11,800	1,501	0	35,400
No. Landed	76,938	39,548	5,164	304	121,954
% Examined	29	30	29	0	29
No. Marks	1,031	550	61	0	1,642

RELEASE AGENCY



BASIN OF RELEASE



NOTE: Does not represent stock contribution rates, since tagging is not representative of all stocks.

Figure 9. Observed recoveries of coho coded wire tags from Oregon troll salmon landings by release agency and by basin of release, 1990.

relationship between troll gear and coho interception rates, and monitored and evaluated an experimental terminal troll fishery in state waters surrounding Coos Bay.

Troll Gear Study

An ocean troll gear study was conducted during the 1990 troll season to address a proposal by the troll industry. This proposal, which addressed the problem of trying to minimize coho interception during May/June directed chinook seasons, suggested that troll vessels use not more than 4 "spreads" (lures or baits) per line. The PFMC's Salmon Technical Team is currently unable to quantify the benefits that would be derived from such a regulation, and recommended that pertinent data on this issue be gathered in order to develop estimates of savings of coho that could then be applied back to the fishery.

The ODFW chartered three troll vessels to fish "with the fleet" during late May and June. The vessels fished and rotated daily between three sets of gear -- four, seven, and ten spreads per line. Terminal tackle was basically the same on all three vessels (alternating spoons and hoochies-with-flashers by spread). The OSMP observers were on each of the three vessels at all times to record catches of legal chinook, sublegal chinook, coho, and other species on the three gear arrays. Both permanent and seasonal staff participated as observers. Results of this study are reported as a draft report "Differential Selectivity of Three Gear Arrays Used in Commercial Trolling for Coho and Chinook Salmon", by Dr. Peter Lawson (ODFW, Marine Science Dr., Newport, Oregon 97365), and has been submitted to the North American Journal of Fisheries Management. Preliminary information indicates that a four spread regulation would significantly reduce coho hooking incidence without reducing chinook catch.

Coos Bay November Troll Test Fishery

A troll industry proposal at the April, 1990 PFMC meeting resulted in the Council adoption of a limited state waters troll test fishery in November off Coos Bay to target on returning Coos Bay fall chinook stocks. This limited entry fishery was restricted to state waters (0-3 miles of shore) in the area immediately North and South of the entrance to Coos Bay, with only 10 permits issued through a lottery style drawing. This special season was open from November 1 through 14.

Extremely poor catch rates and rough weather limited landings and participation. Only seven chinook and one coho were landed, and all fish were sampled by OSMP samplers. Of the seven chinook, three appeared to be mature fish, and one of the three had a coded-wire tag from Elk River Hatchery. The remaining four chinook appeared to be "feeders" (i.e. they showed no visual cues of maturity: color change, kipe formation, etc.). The few fish landed do not present enough data to be useful in determining the effectiveness of this season to harvest mature Coos Basin fall chinook.

THE 1990 OCEAN RECREATIONAL SALMON FISHERY

BACKGROUND

Oregon's ocean recreational salmon fishery had its origins from boats fishing in the bays in late August and September on stocks returning to spawn in their natal streams. A few boats would fish in the ocean on favorable days. The late 1940s and early 1950s marked the beginning of increasing effort by both the charter and private boat fleet in the ocean. Better and safer equipment plus the development of small boat basins and launching ramps and other support facilities in many coastal towns encouraged ocean fishing (PFMC, 1978).

The primary catch of the present day recreational fleet is coho salmon with chinook a distant second. The fishery has been sampled by ODFW's Ocean Salmon Management Program intermittently since the early 1960s. Ocean creel data was supplemented by ODFW salmon/steelhead tag license data through the 1980 season. Creel data alone have been used since 1981.

The peak catch and effort year was 1976 when 79,300 chinook and 501,300 coho were taken. In 1990, we estimated an ocean catch of 26,500 chinook and 200,300 coho from 246,500 salmon angler trips (Table 8).

SAMPLING METHODOLOGY

Sampling areas and staffing

Twenty-two seasonal employees sampled the ocean recreational fishery at 10 major ports in 1990. Newport had five samplers; Astoria, Garibaldi, Winchester Bay, and Brookings each had three; Coos Bay had two; and Pacific City, Depoe Bay, and Florence each had one sampler. Limited sampling began in May in all ports except Pacific City and Florence. Additional samplers were added on in mid-June and sampling started in Florence and Pacific City. Gold Beach was not sampled in 1990. All samplers made boat counts to monitor vessel effort and checked returning anglers for catch. Total sampler months and staff size increased over 1989 levels due to longer salmon seasons and additional special investigations (Appendix Table 5).

Sampling Design

A modified random sampling design has been used in all recent years at each port to survey the ocean recreational fishery. Catch per angler data was collected at least 4 days a week, including all weekends and holidays through interviews with ocean anglers at boat ramps, moorages, and charter docks. Samplers usually worked from early morning to late afternoon, but varied their hours to reflect fishing activity. The salmon catch was sampled for species, fin marks, and scales. The data were recorded on forms designed to be read by an optical scanner (Appendix Figure 2). Snouts were collected from marked (adipose fin-clipped) fish, and forwarded to the ODFW tag reading laboratory in Clackamas for decoding. Information on the catch of bottomfish was also taken.

Effort information was primarily obtained through boat counts by ODFW samplers, but Coast Guard bar crossing counts, and information from charter boat offices were also used. ODFW boat counters worked from dawn until 1 p.m. They tallied both out-going and in-coming boats crossing the bar. A special study at Newport evaluated afternoon effort counts from mid-June through mid-September. In Pacific City, total effort was estimated from a combination of boat trailer counts and a tally of outgoing vessels.

Quota Assessment

Catch and effort data were error-checked and then processed on the Department's Unisys computer by Newport data staff. The angler interviews, stratified by charter and private boat angler, provided average catch rates, by species. These catch rates, when multiplied by the total effort for a particular time period resulted in a catch estimate for that period. The same method was used to estimate total number of angler trips. The survey provided accurate weekly estimates of Oregon's ocean recreational effort and catch within 7 days after the week ended. A preliminary catch estimate was available within one day of the end of the week. These catch estimates were necessary because of catch quotas.

Department samplers checked 96,118 salmon in 1990 compared to 130,456 in 1989. Catch sampling rates in 1990 ranged from 72% at Pacific City to 35% at Newport. Overall, 42% of the salmon catch from all ports was sampled in 1990 compared to 43% in 1989 (Appendix Table 5).

REGULATIONS

General

The Oregon coast was divided into three salmon management areas for 1990, each with different regulations. The regulations were set by the Pacific Fishery Management Council and the Oregon Fish and Wildlife Commission. The Oregon Fish and Wildlife Commission also adopted one special season in state waters. Appendix Table 6 gives a historical perspective of recreational ocean salmon regulations.

North of Cape Falcon

The recreational fishery from Cape Falcon to the US/Canada border had an overall quota of 37,500 chinook and 245,000 coho. A conservation zone closure was in effect from Buoy 10 out to 6 miles at the Columbia River mouth (Figure 10). A subarea quota of 13,100 chinook and 122,500 coho was established between Leadbetter Point and Cape Falcon. The daily bag limit was 2 salmon, with an annual limit of 40 fish, but no weekly possession limit. Minimum size limits were 24" for chinook, and 16" for coho. Only single point barbless hooks were permitted. Salmon fishing was closed Fridays and Saturdays (Appendix Table 7 and Figure 11).

The season opened June 24 and continued through August 30. The season reopened for two days September 8 and 9 to catch the remainder of the quota. The Buoy 10 fishery opened August 13.

Cape Falcon to Humbug Mountain

The recreational coho quota was 235,000 fish south of Cape Falcon to the US/Mexico border. In-season closures were set preseason and scheduled to dampen catches in late June and early August. The first closure period was required with the second optional, dependant on need, and was implemented. The daily bag limit was 2 salmon, not more than 6 fish were allowed in 7 consecutive days, and the annual limit was 40 salmon. Minimum size limits were 20" for chinook and 16" for coho. Single point, barbless hooks were required.

This fishery opened May 1 and closed on September 16. Two closures occurred within this time frame: June 23 through 29, and August 1 through 7. From May 1 through 27, the fishery was restricted to the area inside of the 27 fathom curve.

Humbug Mountain to Horse Mountain (KMZ Area)

The coho catch in the KMZ area (Humbug Mountain, Oregon to Horse Mountain, California) counted against the 235,000 fish quota, but this fishery would not close even if the quota was met. The daily catch limit was 2 salmon per day, except from June 30 through August 15 only one fish in the bag could be a chinook. Not more than six salmon could be taken in seven consecutive days; Oregon had an annual bag limit of 40 salmon. Minimum size limits for all species was 20" and single point, barbless hooks were required.

The season opened on May 1 and closed as scheduled on September 9. There were no 27 fathom restrictions, or inseason closures within this Klamath Management Zone in 1990.

Late Season, State Waters Fisheries

State waters off Tillamook Bay between Twin Rocks to the north, and Pyramid Rock to the south were open from September 17 through October 31. All general season regulations applied except barbed hooks were allowed, coho were prohibited and there was no minimum size limit.

EFFORT AND CATCH STATISTICS

Effort

Before 1979, ocean fishing effort data included a small number of bottomfishing trips. Since 1979, salmon fishing trips have been tallied separately from bottomfishing trips. Most ocean anglers choose salmon fishing over bottomfishing when both fisheries are available. In 1990 however, bottomfishing trips predominated in May and early June in all sampled ports except Winchester Bay. This may, in part, be due to the 27 fathom restriction since most salmon are well offshore in May, and bottomfish are available. In addition, halibut fishing has greatly increased in popularity, especially in the Newport area.

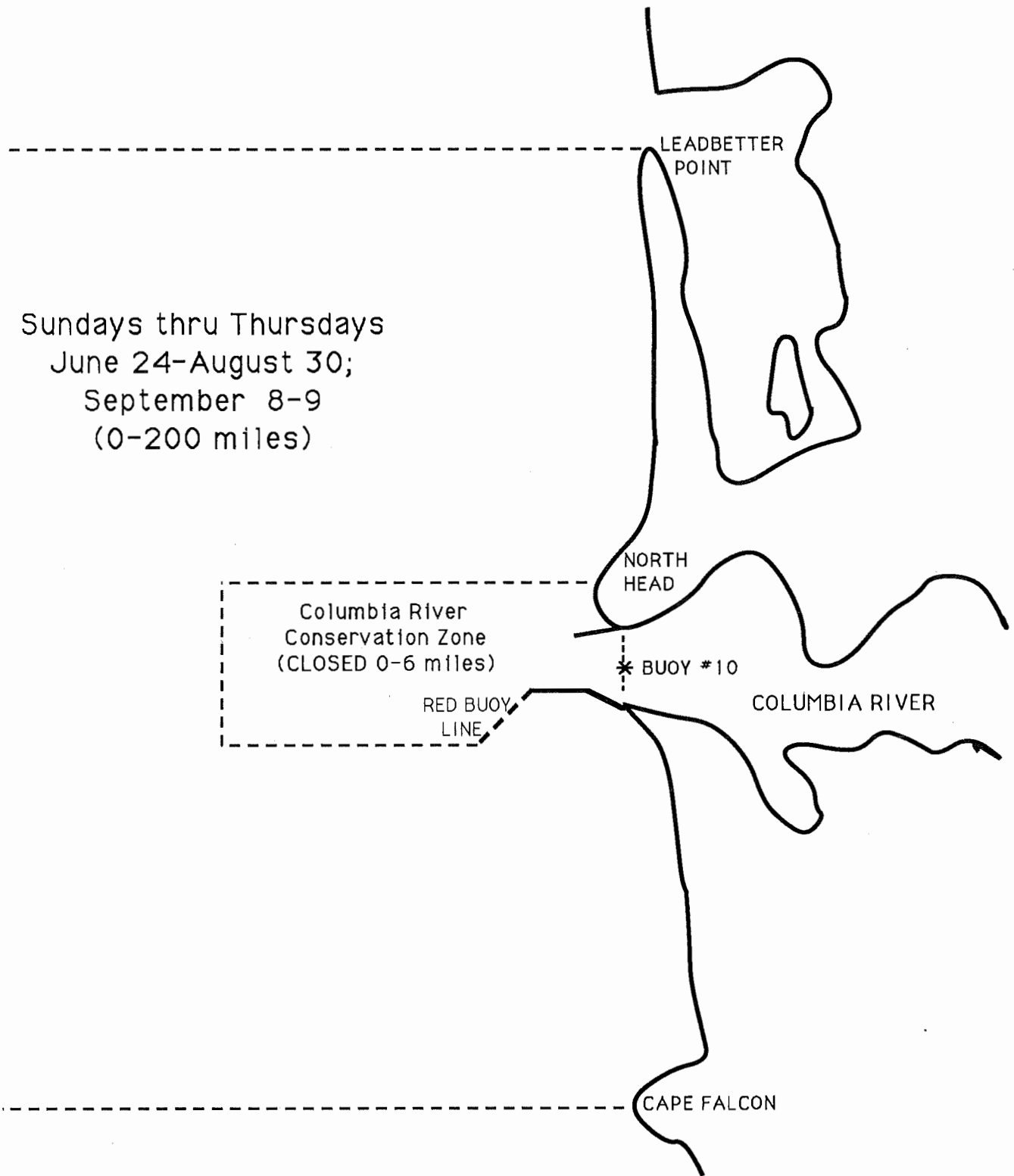


Figure 10. Open areas in the ocean recreational salmon fishery in the Columbia River Area, 1990.

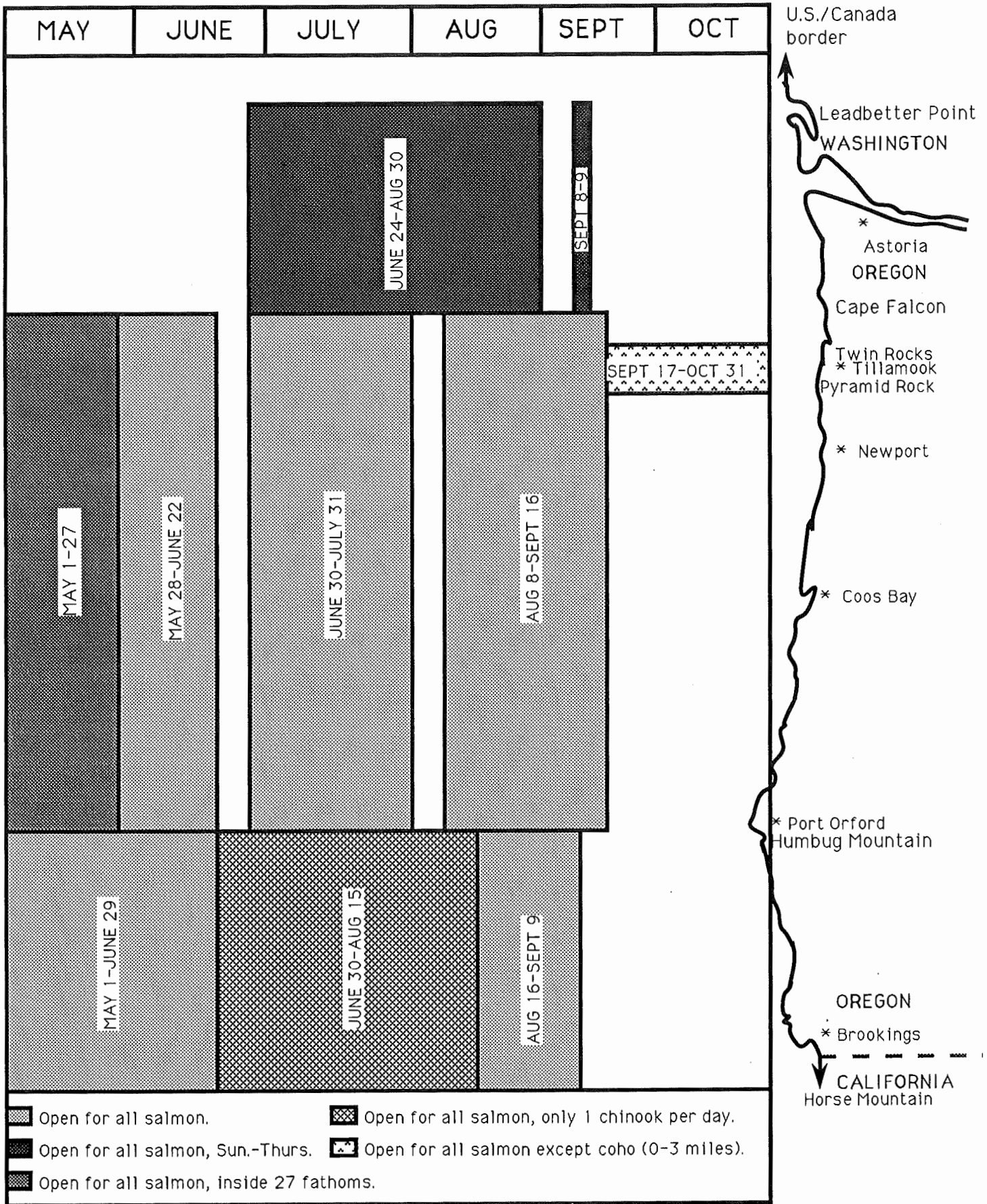


Figure 11. Open recreational salmon seasons off Oregon, 1990.

In 1990, 246,500 trips (83%) targeted on salmon coastwide, and 52,100 additional trips went out for bottomfish during the salmon season for a combined total of 293,900 angler trips. This total is less than the sum of the salmon and bottomfish trips because of a small number of combination trips. The number of 1990 salmon angler trips was 2% below the 1979-89 average. The total effort was 10% below the 1971-89 average of 328,100 angler trips which includes some years with no closed season or 8 month seasons (Tables 8 and 9)

The south of Cape Falcon ocean salmon recreational fishery was closed for the weeks of June 23-29 and August 1-7. The closures did not significantly change the traditional effort pattern. July was still the peak month coast-wide with 98,700 salmon angler trips, 40% of the total. August was close behind with 94,300 trips, 38% of the total. August was the top month for bottomfishing effort with 16,100 trips or 31% of the total bottomfishing trips (Table 9 and Figure 12).

Historically, July has the highest effort for salmon, especially from Winchester Bay south, while August is the top month from Pacific City north. The trend is less defined on the central coast, but July is usually the peak month (Appendix Table 8). Brookings had the highest salmon fishing effort in 1990 with 51,100 angler trips, 21% of the state's total. (Figure 13) Newport had the highest bottomfishing effort, and the second highest salmon fishing effort with 48,100 angler trips. Winchester Bay followed with 35,500 salmon angler trips. Salmon effort was down from the 1989 levels in all areas except the Columbia River which saw a 12% increase, and Garibaldi with an 11% increase (Table 9 and Figure 14). Appendix Table 9 shows past ocean recreational effort and catch by management areas.

Catch

The sport sampling survey estimated Oregon's ocean salmon recreational catch for 1990, by species, except for minor landings from unsurveyed ports and time periods. Fish landed at these unsurveyed ports usually represent less than one percent of the total catch. Catch estimates from salmon/steelhead tag data for such ports will not be available until mid-1991.

The 1990 ocean recreational salmon catch was estimated at 226,800 fish, a 26% decrease from 1989. This is well below the record 580,700 fish catch of 1976, and is 20% below the 1966-89 average of 284,200 salmon (Table 8). Figure 15 shows the trend in recreational ocean catches since 1966.

Chinook: The recreational harvest of 26,500 chinook in 1990 was 17% below the 1989 level, and was only 67% of the 1966-89 average catch of 39,500 fish. Brookings, Winchester Bay, and the Columbia River area dominated the chinook landings, taking 48%, 30%, and 26% of the total catch, respectively (Table 10 and Figure 16). Historically, the Columbia River area has been an important chinook catch area, but complex fishery issues, restrictions, and resulting small quotas north of Cape Falcon have combined to dampen catches (Appendix Tables 9 and 10). July accounted for 46% of the catch (12,100 fish) with Brookings taking 54% of those chinook (Table 10 and Figure 17).

Coho: The 1990 catch of 200,300 coho by the recreational fleet was 26% below the 1989 harvest, and only 82% of the 1966-89 average of 244,700 fish (Table

Table 8. Oregon ocean recreational salmon catch and effort for 1966-90^a.

Year	Effort (Angler Trips)		Salmon Catch			Fish/Angler
	Salmon	Total	Coho	Chinook	Pink	
1966	-	-	227,900	37,400	-	-
1967	-	-	351,000	42,800	-	-
1968	-	-	265,800	25,100	-	-
1969	-	-	232,900	31,800	-	-
1970	-	-	257,400	42,900	-	-
1971	-	303,700	311,700	29,600	121	1.12
1972	-	331,700	248,400	44,100	58	0.88
1973	-	350,400	232,068	60,984	2,008	0.84
1974	-	335,849	314,501	36,729	34	1.05
1975	-	407,498	252,209	75,719	1,218	0.81
1971-75 Avg	-	345,829	271,776	49,426	1,115 ^b	0.93
1976	-	538,414	501,306	79,316	50	1.08
1977	-	404,534	195,277	61,364	4,037	0.62
1978	-	403,740	259,769	22,844	24	0.70
1979	301,343	341,770	180,834	20,902	607	0.67
1980	331,443	362,015	325,843	19,014	24	1.04
1981	311,027	350,937	199,812	29,173	1,589	0.74
1982	226,022	275,947	175,128	38,716	14	0.95
1983	226,029	261,456	146,904	24,677	69	0.76
1984	153,061	203,591	123,325	16,992	3	0.91
1985	251,583	270,860	182,486	55,867	7,711	0.97
1986	186,483	212,600	211,666	22,366	0	1.26
1987	255,048	279,500	177,439	58,595	904	0.93
1988	251,979	288,523	226,403	38,617	0	1.05
1989	266,605	311,713	272,240	32,069	1,325	1.15
Long-term average	250,966	328,145	244,680	39,485	2,029 ^b	0.93 ^c
1990	246,461	293,907	200,294	26,500	3	0.92

^a Prior to 1981, sampling data were supplemented with salmon/steelhead tag data for ports and time periods not sampled.

^b Odd year average

^c 1979-89 average

Table 9. Oregon ocean recreational effort by port, by month and by trip type^a, 1990.

Port/Trip Type	Month					Total ^b
	May	June	July	August	Sept.	
Columbia R.	-	1,930	8,933	13,205	1,436	25,491
Salmon	-	1,930	8,933	13,205	1,423	25,491
Bottomfish	-	0	0	0	13	13
Garibaldi	1,291	3,008	9,688	16,936	6,294	37,217
Salmon	94	878	8,048	14,854	5,666	29,540
Bottomfish	1,204	2,222	2,075	2,460	742	8,703
Pacific City	-	405	1,944	1,626	457	4,432
Salmon	-	298	1,853	1,469	314	3,934
Bottomfish	-	107	91	157	143	498
Depoe Bay	2,116	4,129	11,883	12,456	2,238	32,822
Salmon	178	1,533	10,642	9,723	1,184	23,260
Bottomfish	1,973	2,862	2,023	3,178	1,199	11,235
Newport	5,124	9,119	23,377	23,936	4,092	65,648
Salmon	469	3,949	22,156	18,612	2,921	48,107
Bottomfish	4,710	5,337	2,008	5,969	1,171	19,195
Florence	8	1,025	4,740	7,637	2,429	15,839
Salmon	8	1,025	4,725	7,615	2,420	15,793
Bottomfish	0	0	15	22	9	67
Winchester Bay	480	5,617	14,485	12,617	2,808	36,007
Salmon	442	5,407	14,472	12,420	2,722	35,463
Bottomfish	50	210	13	197	86	556
Coos Bay	675	3,267	5,438	6,009	1,607	16,996
Salmon	136	2,393	5,064	4,867	1,306	13,766
Bottomfish	539	874	374	1,144	301	3,232
Brookings	2,971	15,766	24,004	14,343	2,371	59,455
Salmon	1,398	14,530	22,795	11,538	846	51,107
Bottomfish	1,585	1,263	1,307	2,929	1,538	8,622
Total south of						
Cape Falcon	12,665	42,336	95,559	95,560	22,296	268,416
Salmon	2,725	30,013	89,755	81,098	17,379	220,970
Bottomfish	10,061	12,896	7,906	16,056	5,189	52,108
State Total	12,665	44,266	104,492	108,765	23,719	293,907
Salmon	2,725	31,943	98,688	94,303	18,802	246,461
Bottomfish	10,061	12,896	7,911	16,056	5,202	52,121

^a Bottomfish effort is estimated only for those time periods when port sampling occurred.

^b Totals may be less than the sum of trip types because of a small number of combination trips on charter boats.

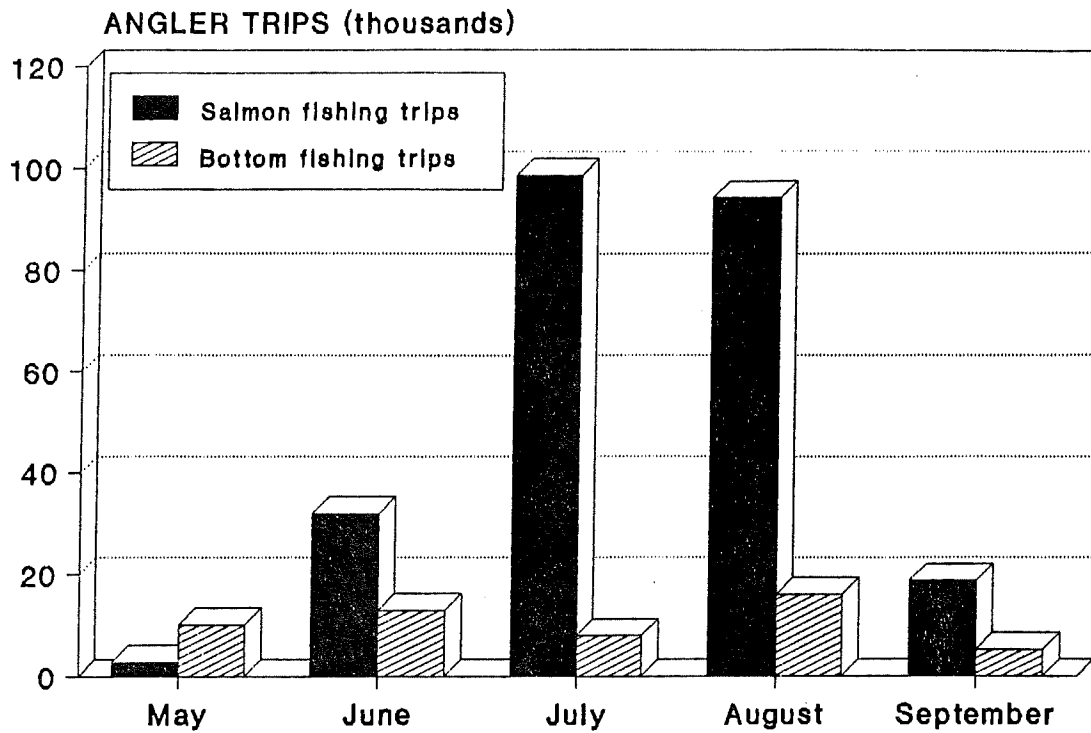


Figure 12. Oregon ocean angler trips by target species during the 1990 salmon season.

Salmon Fishing Effort

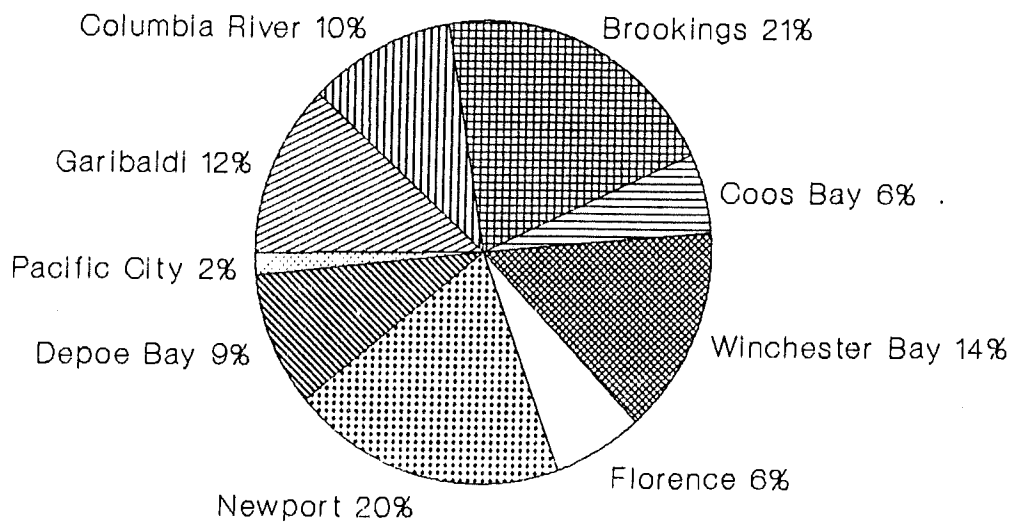


Figure 13. Recreational ocean salmon angler trips by port, 1990.

Effort

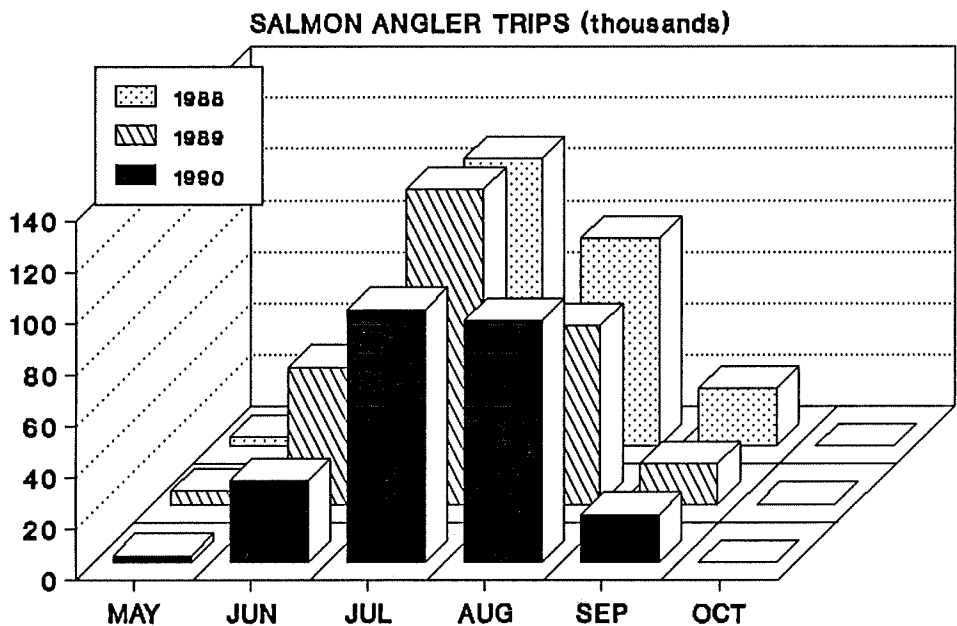
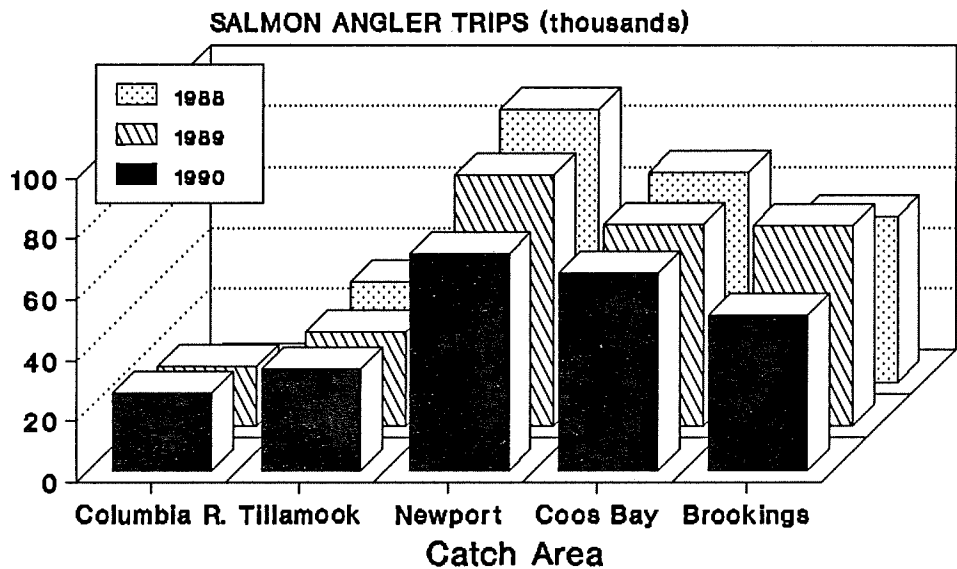
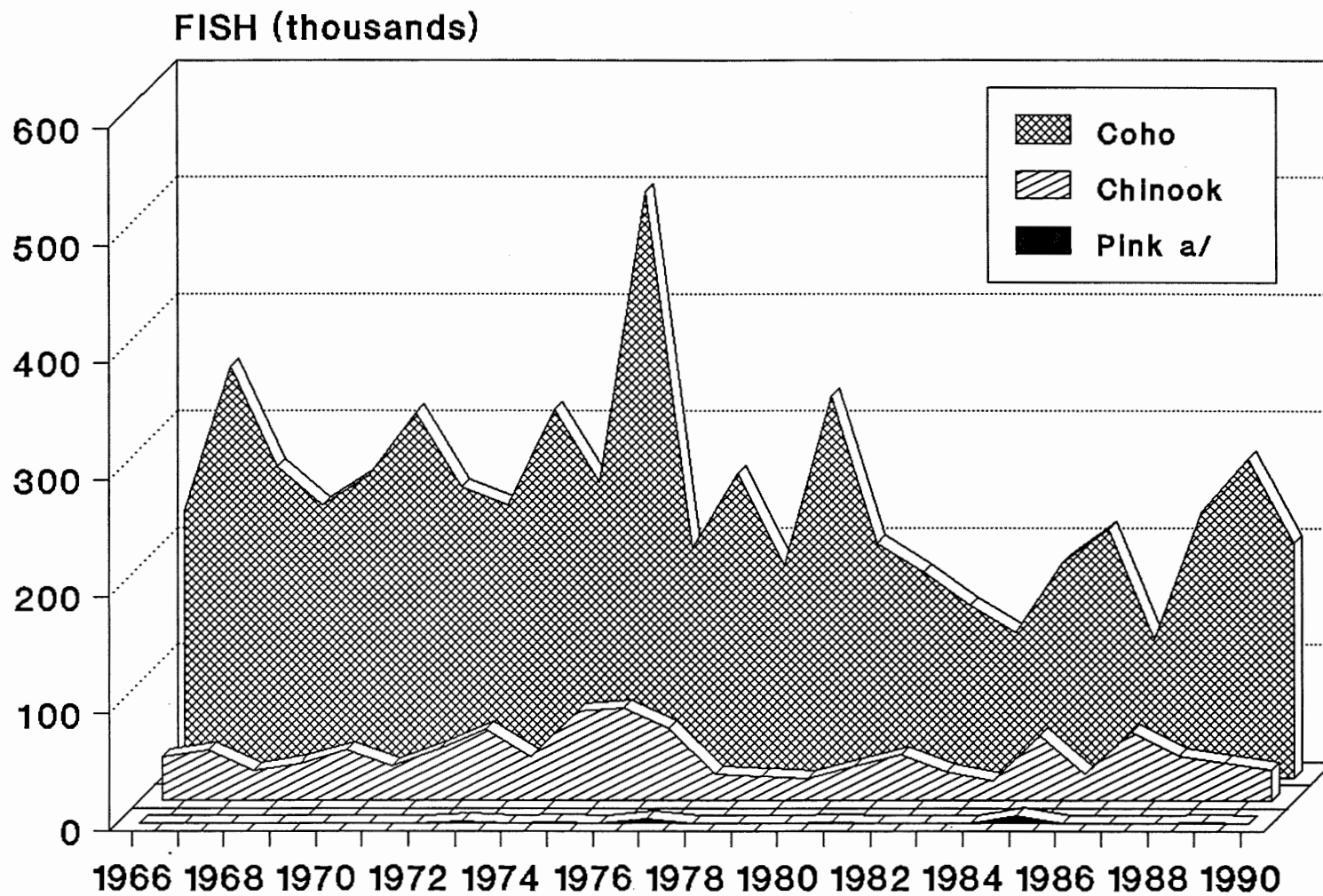


Figure 14. Oregon ocean recreational salmon angler trips by catch area and month, 1988-90.



a/ Pink salmon data from 1971-90 only.

Figure 15. Trends in Oregon's recreational ocean salmon catch, 1966-90.

Table 10. Oregon ocean recreational chinook catch by port by month^a, 1990.

Port	Month					Total
	May	Jun	July	Aug	Sept.	
Columbia R.	-	100	928	2,208	87	3323
Garibaldi	0	22	357	359	255	993
Pacific City	-	32	133	37	23	225
Depoe Bay	8	50	398	209	46	711
Newport	8	269	1,000	560	107	1,944
Florence	0	55	258	444	235	992
Winchester Bay	6	396	1,755	1,370	283	3,810
Coos Bay	7	181	766	495	306	1,755
Brookings	393	4,622	6,519	1,168	45	12,747
Total South of Cape Falcon	422	5,627	11,186	4,642	1,300	23,020
Statewide Total	422	5,727	12,114	6,850	1,387	26,500

^a Monthly totals are the sum of statistical weeks estimates with closest fit to calendar month.

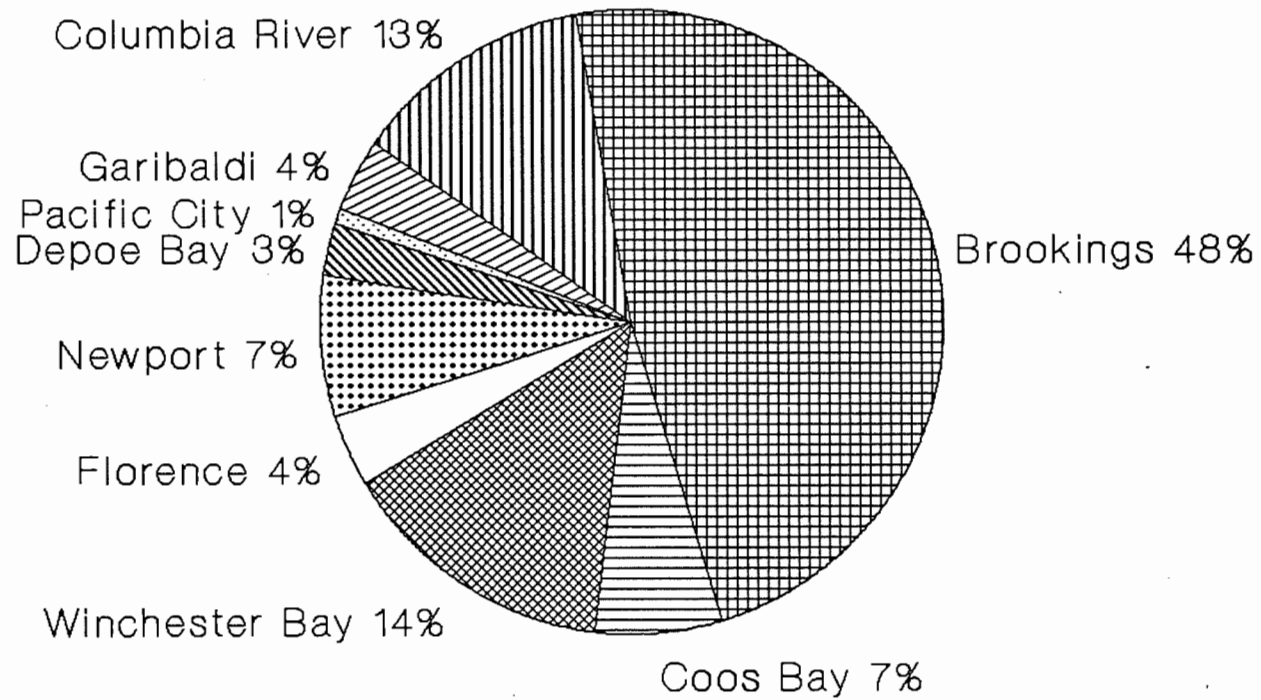


Figure 16. Oregon ocean recreational chinook catch by port, 1990.

Chinook

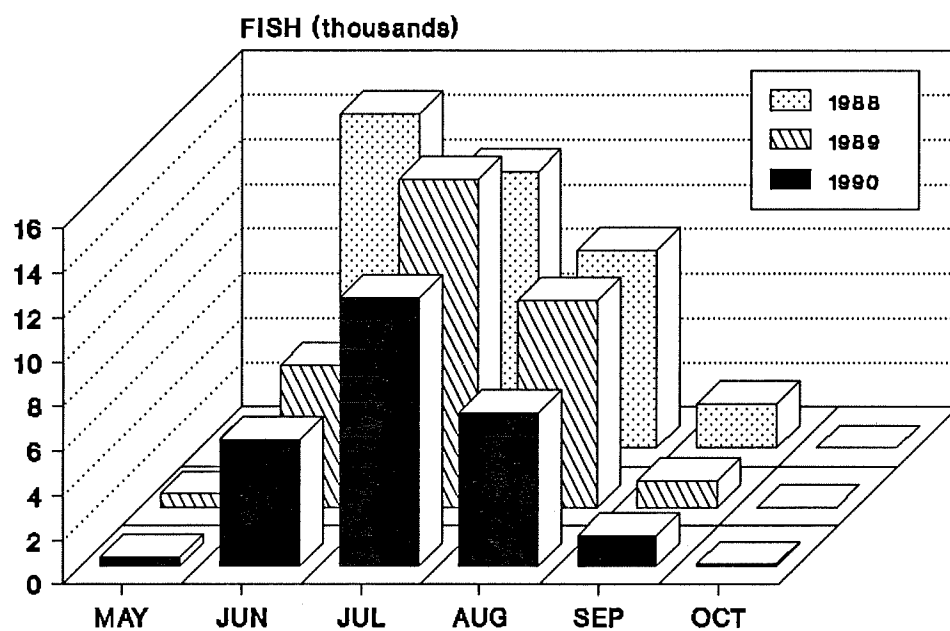
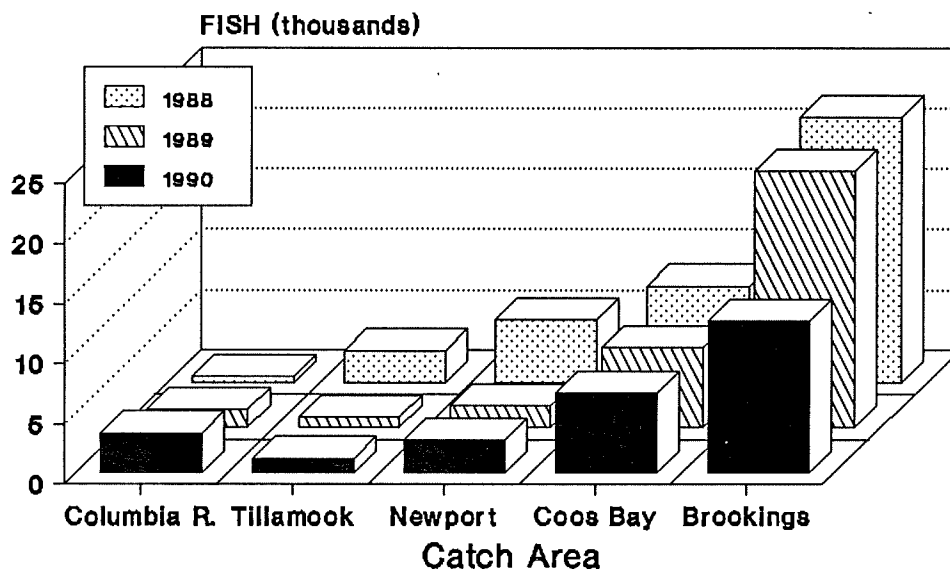


Figure 17. Oregon ocean recreational chinook catch by catch area and month, 1988-90.

Table 11. Oregon ocean recreational coho catch by port by month^a, 1990.

Port	Month					Total
	May	June	July	Aug.	Sept.	
Columbia R	-	3,511	14,686	16,573	1,307	36,077
Garibaldi	0	522	6,737	11,070	690	19,019
Pacific City	-	369	1,965	1,337	138	3,809
Depoe Bay	17	1,355	13,321	7,877	429	22,999
Newport	142	4,494	24,524	11,023	812	40,995
Florence	0	1,493	4,434	7,024	1,215	14,166
Winchester Bay	14	7,649	14,200	12,808	1,263	35,934
Coos Bay	9	3,188	4,793	3,341	646	11,977
Brookings	95	8,357	5,015	1,808	43	15,318
Total South of Cape Falcon	277	27,427	74,989	56,288	5,236	164,217
Statewide Total	277	30,938	89,675	72,861	6,543	200,294

^a Monthly totals are the sum of statistical weeks estimates with closest fit to calendar month.

8). This reduction reflects, in part, the two closures at the end of June and the first week in August. Newport landed the most coho, 41,000 fish or 20% of the total. Winchester Bay and the Columbia River area each took 35,900 and 36,100 coho, together making up another 36% of the catch. Landings were below 1989 levels in all ports except for the Columbia River area and Florence (Table 11 and Figures 18 and 19). July had 45% of the catch (89,700 fish), but another 36% (72,900 coho) were landed in August. A historical perspective on coho catch by month and catch area is shown in Appendix Tables 9 and 11.

CHARTER/PRIVATE BOAT FISHERIES

Charter Anglers

A total of 142 charter boats were active in Oregon ocean recreational fisheries in 1990, compared to about 145 vessels in 1989. No estimate is available of the number of individual private boats that fished. Since 1973, catch and effort statistics have been compiled by boat type for all sampled ports.

Effort: The 1990 charter boat effort was estimated at 55,300 salmon angler trips, down 8% from the 1989 level, but within 2% of the 1979-89 average of 56,200. The data prior to 1979 included bottomfish effort. Charter anglers made up 22% of the total ocean salmon trips in 1990, compared to 23% in 1989 (Table 12 and Figure 20).

Charter boats operate out of most major Oregon ports but boat and fleet sizes vary. The Astoria-Warrenton-Hammond area had the largest fleet in 1990 (41 boats), and 8,500 salmon angler trips in the ocean. However, Depoe Bay, with 24 active charter boats, had the most salmon effort of any port with 14,000 angler trips, followed by Newport (33 boats) with 12,600 angler trips. Salmon charter effort was down from 1989 levels in all ports except Garibaldi and Florence (Table 12).

Salmon is the primary pursuit in all ports, but bottomfishing is also important to the Garibaldi, Pacific City, Depoe Bay, Newport, Coos Bay, Gold Beach, and Brookings charter fleets. Halibut fishing is especially important in Newport during May and June. One third or 30,300 charter anglers coastwide targeted on bottomfish during the salmon season. An additional 4,700 combination trips fished for both salmon and bottomfish (Table 13). In 1989, 32,100 (35%) of the total charter anglers went bottomfishing during the salmon season.

Catch: Charter anglers landed 5,100 chinook and 61,400 coho salmon in 1990. The total catch of 66,500 salmon by charter anglers was down 26% from 1989, even though effort only decreased by 8%. The charter fleet landed 29% of the total recreational salmon catch in 1990, the same as in 1989 (Figure 20).

The Columbia River area had a comparatively long season in 1990, and its large charter fleet took 15,200 salmon or 23% of the total charter salmon catch. The salmon fishery in this area was only open 5 days per week. However, success was high through most of the season and averaged 1.8 salmon per

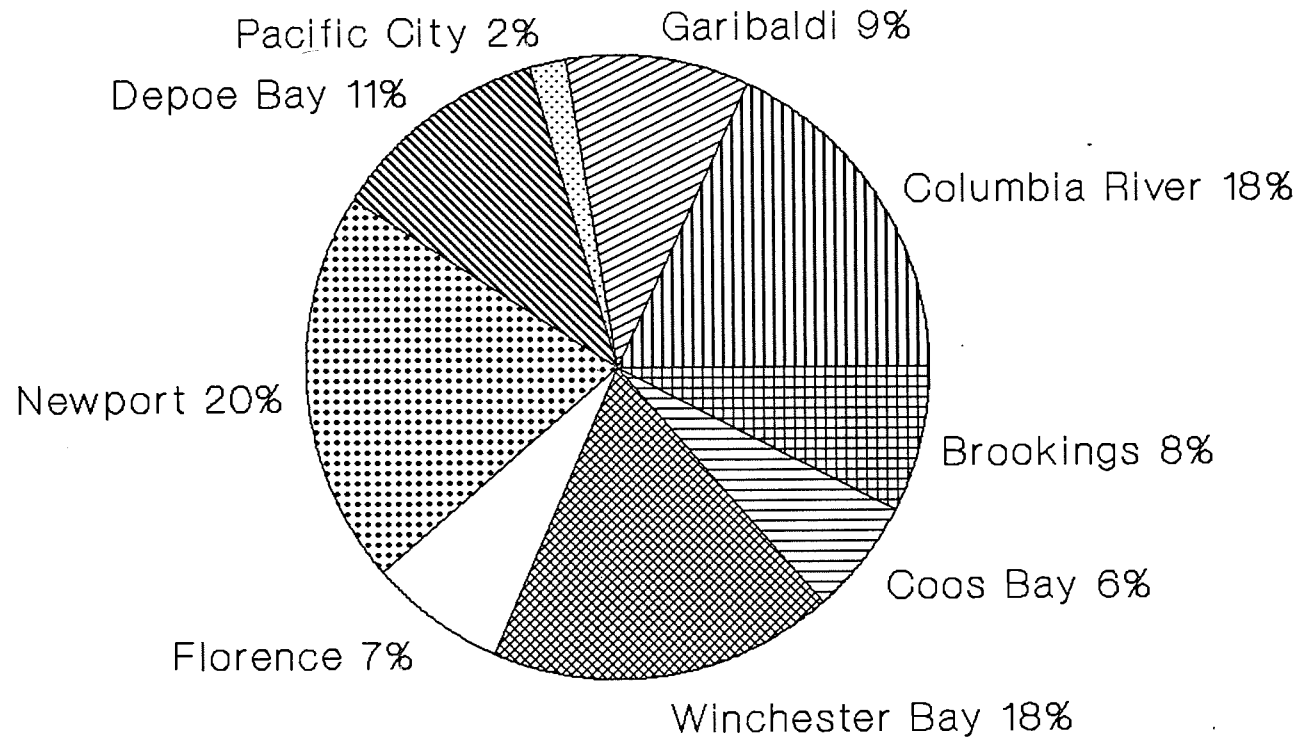


Figure 18. Oregon ocean recreational coho catch by port, 1990.

Coho

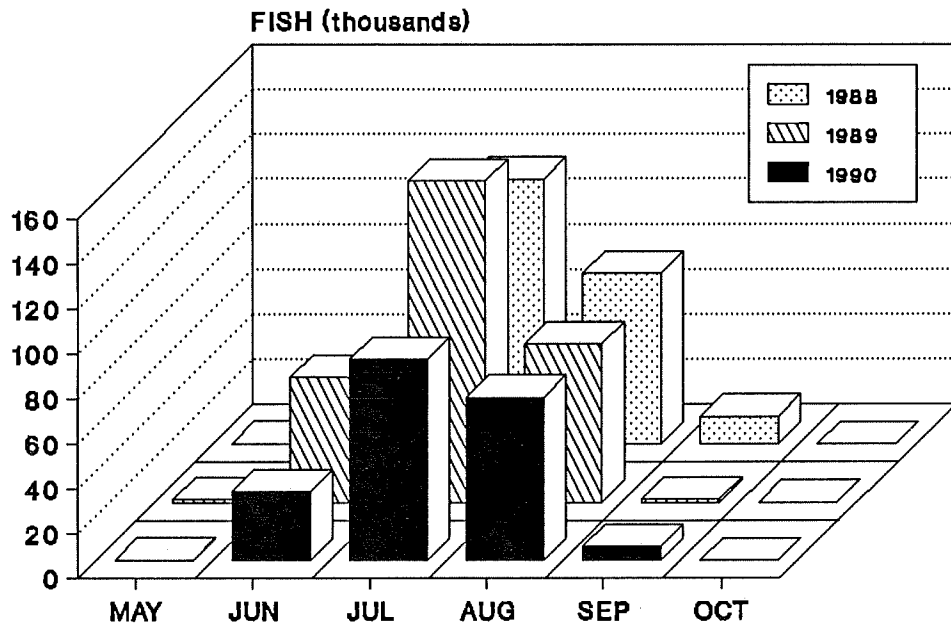
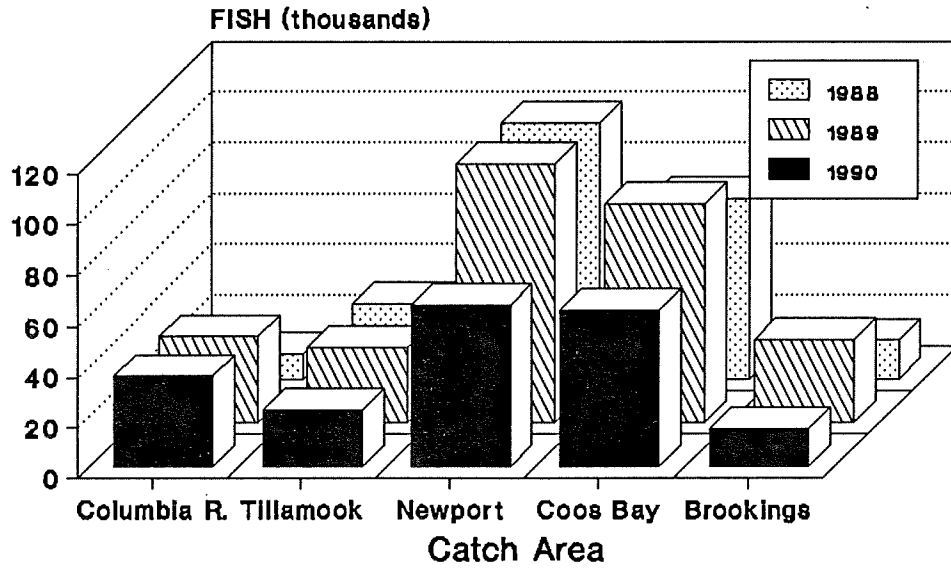


Figure 19. Oregon ocean recreational coho catch by catch area and month, 1988-90.

Table 12. Oregon ocean recreational salmon effort and catch by boat type, 1990.

Port	Salmon Charter Boats ^a					Salmon Private Boats				
	Boat Trips	Angler Trips	Salmon Catch			Boat Trips	Angler Trips	Salmon Catch		
			Chinook	Coho	Pink			Chinook	Coho	Pink
Columbia R.	1,111	8,490	1,111	14,117	0	5,340	16,992	2,212	21,960	3
Garibaldi ^b	609	5,464	206	5,955	0	9,019	24,076	787	13,064	0
Pacific City ^c	0	0	0	0	0	1,250	3,934	225	3,809	0
Depoe Bay	1,644	14,027	411	14,379	0	3,250	9,233	300	8,620	0
Newport	1,503	12,556	702	14,171	0	12,258	35,551	1,242	26,824	0
Florence ^c	81	429	11	314	0	5,720	15,364	981	13,852	0
Winchester Bay	1,413	9,120	1,234	8,948	0	9,884	26,343	2,576	26,986	0
Coos Bay	356	2,689	269	2,294	0	4,281	11,077	1,486	9,683	0
Brookings	484	2,495	1,124	1,235	0	19,729	48,612	11,623	14,083	0
Total	7,201	55,279	5,068	61,413	0	70,731	191,182	21,432	138,881	3
Combined totals for all Oregon craft	77,932	246,461	26,500	200,294	0					

^a Includes combination salmon & bottomfish trips.

^b Sampling ended October 31.

^c Sampling started in mid-June.

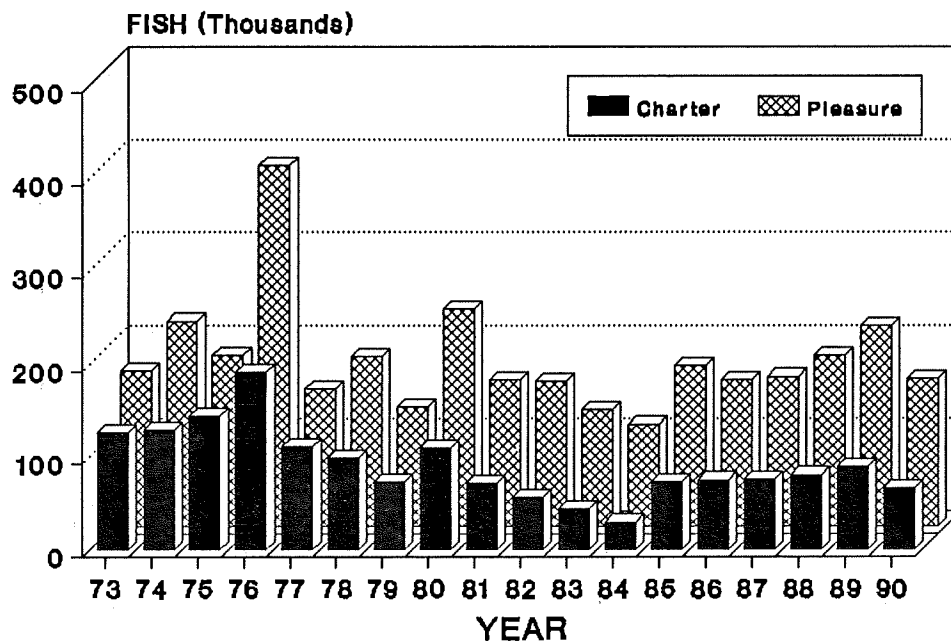
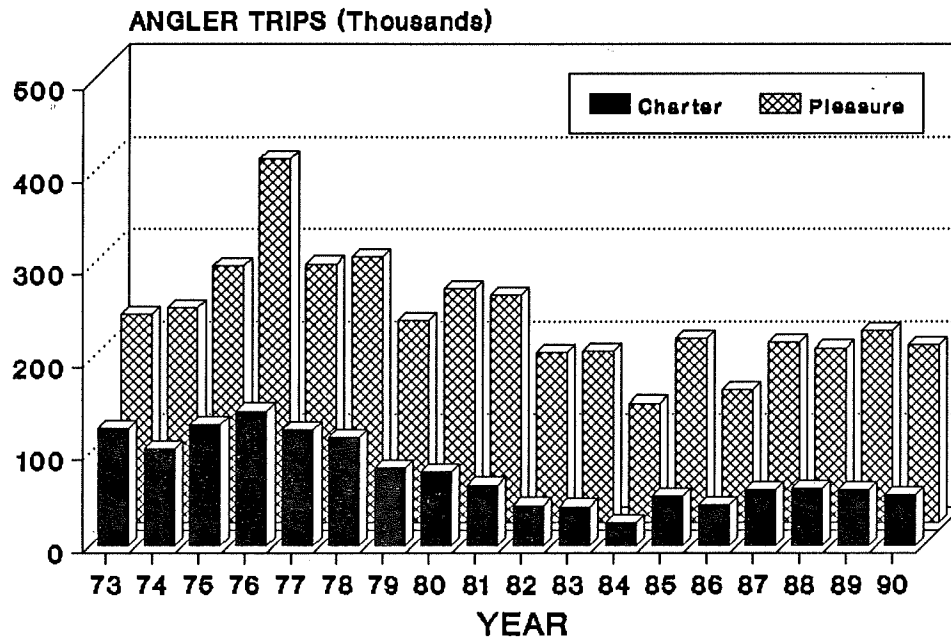


Figure 20. A comparison of effort and catch by Oregon ocean salmon charter and pleasure anglers, 1973-90.

angler. The Newport and Depoe Bay charter fleets took nearly 15,000 salmon each, for a combined 45% share of the charter catch. Salmon per angler averaged 1.2 in Newport, and 1.1 in Depoe Bay compared to the state-wide average of 1.2 and the 1979-89 average of 1.3 salmon per angler.

Private Anglers

Effort: The 1990 salmon effort from private boats was estimated at 191,200 angler trips or 78% of the total salmon effort. This compares with the 1989 effort of 206,400 and the 1979-89 average of 194,600 angler trips (Table 12, Figure 20). Brookings as usual had the most effort with 48,600 private salmon angler trips or 25% of the coast total. Brookings' relatively long salmon season, safe bar, large population of retirees, and varied fishing opportunities all contribute to make this the leading small boat port on the Oregon coast. Newport had 35,600 salmon angler trips or 19% of the total followed by Winchester Bay with 26,300 angler trips (16%). These three ports accounted for 58% of the total private boat effort for salmon.

Some private boats only fish for bottomfish, even during the salmon season. Effort data by trip type (salmon or bottomfish) was collected through interviews, and applied proportionately to the total effort counts. This data showed that 17,200 angler trips or 8% of the private trips targeted on bottomfish, compared to 16,700 angler trips or 7% in 1989. Brookings had the most private bottomfish anglers, followed closely by Newport (Table 13). Almost all anglers target on salmon in the Columbia River area, Florence, and Winchester Bay.

Catch: Anglers from private boats landed 21,400 chinook and 138,900 coho in 1990. The total salmon catch of 160,300 fish in 1990 was 28% below the 1989 catch, but only 3% below the 1979-89 average of 164,700 fish (Figure 20). Private boat anglers caught 71% of the total recreational salmon landed in 1990 compared to the 1979-89 average of 70%.

Winchester Bay private boat anglers landed the most salmon; 29,600 fish or 18% of the total private boat angler catch. Angler success averaged 1.1 salmon per angler. The top effort ports of Newport and Brookings had landings of 28,100 and 25,700 salmon with an average success rate of 0.8 and 0.5 fish per angler respectively. These three ports accounted for 52% of the total private boat angler catch. The coast-wide angler success rate was 0.8 salmon per angler, compared to 1.0 in 1989 and the 1979-89 average of 0.8 (Table 12).

ESTIMATES OF RELEASED SALMON

Background

The number of salmon released ("shakers") was estimated from interview data collected during the ocean sampling survey. The data set depended on people correctly recalling numbers and species of salmon released and varied with the expertise of the angler. The data is not used in active management every year but can be used to evaluate shaker mortalities or other regulation impacts.

Table 13. Oregon ocean recreational effort and catch by boat and trip type^a 1990.

Port	Charter							Private						
	Boat Trips			Angler Trips			Total Catch		Boat Trips		Angler Trips		Total Catch	
	Sal	Comb	Bot ^b	Sal	Comb	Bot	Sal ^b	Bot ^c	Sal	Bot ^c	Sal	Bot	Sal ^b	Bot ^c
Columbia R.	1,110	1	0	8,486	13	0	15,228	135	5,340	0	16,992	0	24,175	507
Garibaldi	493	116	598	4,438	1,026	6,502	6,161	49,470	9,019	415	24,076	1,175	13,851	6,659
Pacific City	0	0	0	0	0	0	0	0	1,250	166	3,934	498	4,034	5,260
Depoe Bay	1,466	178	1,022	12,354	1,673	8,935	14,790	45,761	3,250	261	9,233	627	8,920	3,426
Newport	1,302	201	1,403	10,902	1,654	11,052	14,873	94,982	12,258	2,435	35,551	6,489	28,066	23,381
Florence	77	4	0	408	21	0	325	1	5,720	19	15,364	46	14,833	1,297
Winchester Bay	1,412	1	70	9,108	12	456	10,182	2,798	9,884	25	26,343	88	29,562	870
Coos Bay	356	0	264	2,689	0	1,844	2,563	17,198	4,281	500	11,077	1,388	11,169	11,477
Brookings	426	58	281	2,221	274	1,495	2,359	15,341	19,729	2,853	48,612	6,853	25,706	54,116
Total	6,642	559	3,638	50,606	4,673	30,284	66,481	225,686	70,731	6,674	191,182	17,164	160,316	106,903

^a Trip types are separated by trips that target salmon (Sal), Bottomfish (Bott), or combination trips (Comb). For private boats, combination trips are included as salmon trips.

^b Includes: Coho, chinook and pink salmon.

^c Bottomfish includes: rockfish, lingcod, flatfish, and miscellaneous species.

North of Cape Falcon

We estimated that 2,200 chinook (39%) were released in the Columbia River area during the ocean season. This is considerably below the 1979-89 average (less 1984) shaker rate of 56%, but is above the 26% rate for 1989 (Table 14). The "shaker" rate for coho in the Columbia River area was 6% in 1990 and comparable with the 1979-89 average (Table 15).

South of Cape Falcon

The information on released chinook resembled historical patterns in most ports. Winchester Bay and, sometimes, Coos Bay often encounter small chinook during part of the salmon season (Table 16). The coho data also resembled historical patterns with a 4% statewide "shaker" rate (Table 17).

SPECIAL FISHERIES AND STUDIES

September-October Fishery off Tillamook Bay

The Oregon Fish and Wildlife Commission set state water fishing regulations to open a season for all salmon except coho in state waters off Tillamook Bay between Twin Rocks and Pyramid Rock. The season lasted from September 16 through October 31. The bag limit remained two fish, and barbed hooks were permitted.

This fishery targets on returning fall chinook and most of the effort and catch is inside Tillamook Bay. However, some of the boats do troll back and forth across the bar. The Ocean Salmon Management Program cooperated with the ODFW Tillamook Fisheries District and assisted in a creel survey of the lower Tillamook Bay and got data on ocean effort and catch as well. The ocean creel ran from Sept. 17 through Oct. 31. The data had not been analyzed in time for this report.

Buoy 10 Fishery Inside the Columbia River

The river mouth opened August 13 with catch quotas of 15,000 chinook and 140,000 coho. The Oregon/Washington combined effort was 80,300 angler trips with a catch of 5,200 chinook and 18,700 coho. This fishery is discussed in detail in "The 1990 Lower Columbia River and Buoy 10 Recreational Fisheries" by Steven D. King of the Department's Columbia River Management Group.

Port of Newport Afternoon Effort Counts

Background: Pleasure boat effort in the ocean is monitored by counting boats crossing the bar. Angler interviews give us average catch rate and this value was expanded by total effort to arrive at a catch estimate.

The great majority of pleasure craft depart for fishing trips in the morning, but afternoon departures occur at times. Our standard effort count is from dawn to 1 p.m. In several ports we account for afternoon trips, but special effort is required in others. An additional sampler was added to the Newport

Table 14. Chinook salmon released by Oregon ocean recreational anglers in the Columbia River area, 1979-90.

Year	Number Retained	Number Released	Total Fish Caught	Percentage of Catch Released
1979	7,072	8,719	15,791	55
1980	5,503	7,891	13,394	59
1981	11,516	21,664	33,180	65
1982	8,235	6,949	15,185	46
1983	3,440	3,671	7,111	52
1984	26 ^a	1,410	1,436	98
1985	3,565	5,235	8,800	59
1986	1,909	2,320	4,229	55
1987	4,019	2,467	6,486	38
1988	481	289	770	38
1989	1,464	522	1,986	26
1979-89, Average^b	4,720	6,189	10,693	58
1990	3,323	2,166	5,489	39

^a Illegal or taken south of Cape Falcon

^b Excluding 1984

Table 15. Coho salmon released by Oregon ocean recreational anglers in the Columbia River area, 1979-90.

Year	Number Retained	Number Released	Total Fish Caught	Percentage of Catch Released
1979	37,894	4,905	42,799	12
1980	55,647	1,905	57,552	3
1981	54,294	1,643	55,937	3
1982	35,476	2,082	37,558	6
1983	37,245	8,318	45,563	18
1984	10,874	654	11,528	6
1985	31,010	1,275	32,285	4
1986	36,666	2,197	38,863	6
1987	25,299	2,145	27,444	8
1988	9,844	481	10,325	5
1989	34,211	2,616	36,827	7
1979-88 Average	33,496	2,566	36,062	7
1990	36,077	2,105	38,182	5

Table 16. Chinook salmon released by ocean recreational anglers in 1990 by port.

Port	Number Retained	Number Released	Total Fish Caught	Percentage of Catch Released
Columbia R.	3,323	2,166	5,489	39
Garibaldi	993	5	998	1
Pacific City	225	0	225	0
Depoe Bay	711	22	733	3
Newport	1,944	156	2,100	7
Florence	992	36	1,028	4
Winchester Bay	3,810	892	4,702	19
Coos Bay	1,755	125	1,880	7
Brookings	12,747	881	13,628	6
South of Falcon	23,177	2,117	25,294	8
Total	26,500	4,283	30,783	14

Table 17. Coho salmon released by ocean recreational anglers in 1990 by port.

Port	Number Retained	Number Released	Total Fish Caught	Percentage of Catch Released
Columbia R.	36,077	2,105	38,182	6
Garibaldi	19,019	71	19,090	4
Pacific City	3,809	16	3,825	<1
Depoe Bay	22,999	558	23,557	2
Newport	40,995	877	41,872	2
Florence	14,166	685	14,851	5
Winchester Bay	35,934	3,570	39,504	9
Coos Bay	11,977	326	12,303	3
Brookings	15,318	1,294	16,612	8
South of Falcon	164,217	7,397	171,614	4
Total	200,294	9,502	209,796	4

sampling staff in 1990 to assess the extent of afternoon effort in this port. The following section summarizes the results of this project.

Methods: Morning counts (5 a.m.-1 p.m.) were made every day and afternoon counts (1 p.m.-6 p.m. or later if needed) were scheduled 54 times between June 14 and September 11. The afternoon boat counter started work at 11 a.m. by interviewing returning ocean anglers and finished the work shift by boat counting from 1 p.m. until about 6 p.m.

Results and Discussion: Samplers made 54 all-day boat counts between June 14 and September 11. On those 54 days, 9,882 pleasure boats (94%) crossed the bar prior to 1 p.m. and 668 vessels (6%) crossed after 1 p.m. Some afternoon effort was noted on 48 of the 54 days (89%) with an incidence of 1 to 5 boats being the most common. (Fig. 21). Only 9 days had p.m. effort levels of 21 or more bar crossings, but those days accounted for half of the total p.m. effort and 89% of the expanded catch.

Trips that left port after 1 p.m. were sampled on 21 days but only 15 of those days had both a p.m. boat count and trips sampled. Thirty-one p.m. vessels were sampled for an expanded catch of 315 salmon. On those same 15 days, the expanded catch for a.m. trips was 9,242 salmon (97% of total). The catch estimate was 9,936 salmon if all sampling and counts for the 15 days was combined.

Six percent of the total Newport effort left after 1 p.m. during the study period. Not accounting for this would cause us to under-estimate the entire season port catch.

Afternoon salmon catch rates tended to be less than morning catch rates. For example, the catch per boat for the afternoon was 0.5 salmon compared with 1.85 salmon per boat for morning departures. Only 3% of the total catch during the study period was made by boats leaving after 1 p.m.

Expanded counts mean that sampling must be proportional for the whole day or risk overestimating the salmon catch. It may have been a problem at times in 1990 when we sampled 9% of the p.m. trips and 34% of the a.m. trips.

Boat effort counts vary widely from day to day and do not lend themselves readily to averaging or using a correction factor. With additional personnel, samplers could be assigned to afternoon counts in important ports and time periods but representative sampling would also be necessary for the entire time period.

Given current limitations for seasonal staff time, a more likely approach would be to use existing seasonal staff and restructure scheduling to provide additional counts when warranted. Samplers are already instructed to watch for and react to p.m. effort "pulses". These instructions should be further formalized and schedules adjusted to provide both counts and adequate sampling during those intermittent periods when the effort is warranted.

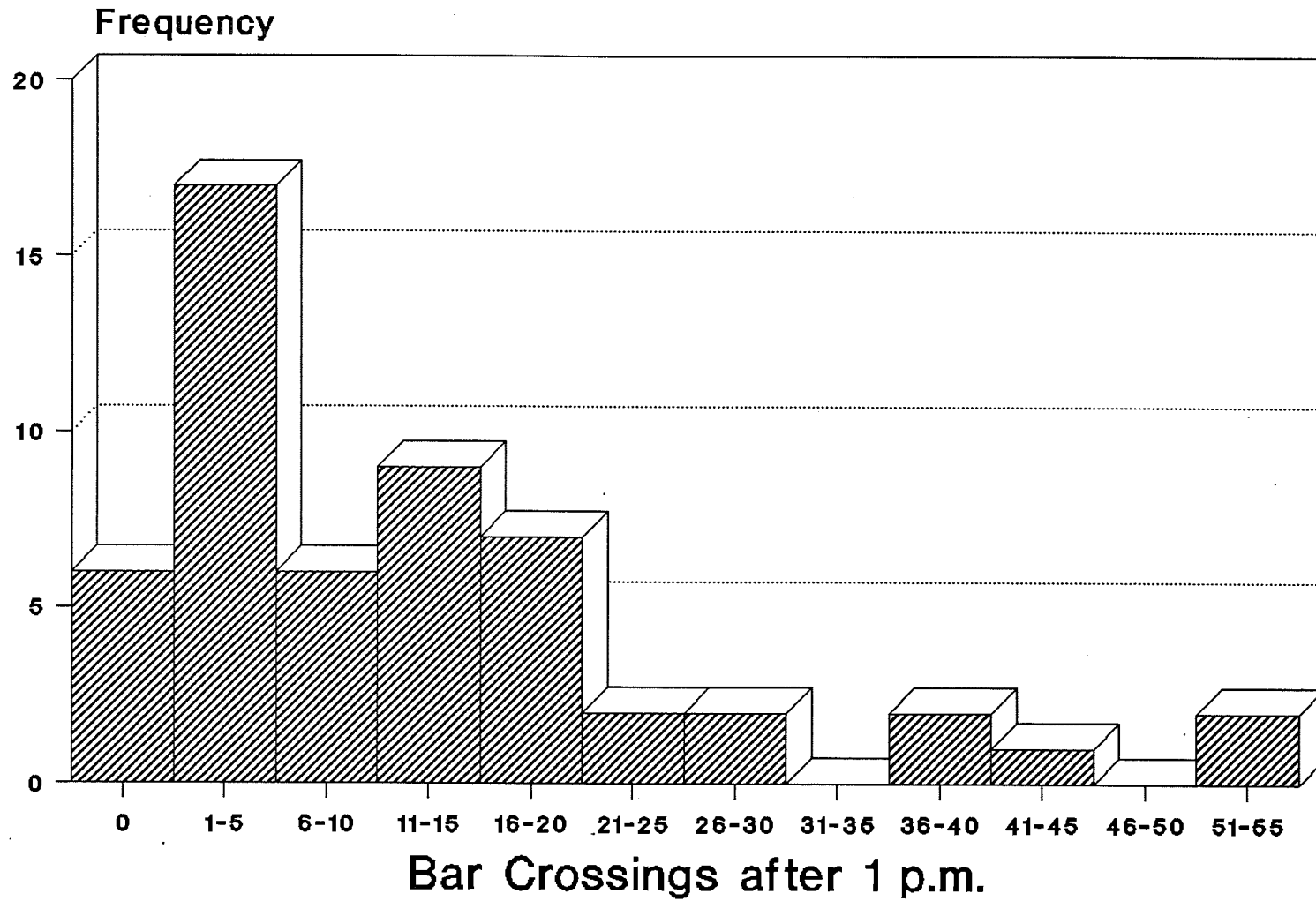


Figure 21. Frequency of bar crossings after 1 p.m., Yaquina Bay, June-September, 1990.

RECREATIONAL OCEAN SALMON CODED-WIRE TAG SAMPLING

Samplers at ten ports observed 42% of the combined chinook and coho landed during the 1990 ocean recreational season.

Chinook

The samplers examined 11,340 chinook and found 449 (4%) that had adipose fin clips (Table 18). Department staff found readable tags in 427 of the 449 chinook heads for a 95% recovery rate. Most of the recovered tags were released by the California Department of Fish and Game (46%) and the Oregon Department of Fish and Wildlife (33%) (Figure 22). Most of the tag recoveries came from the Sacramento and Columbia river basins.

Coho

The samplers examined 84,722 coho and found that 3,758 (4%) that had adipose fin clips (Table 19). Staff found 3,150 readable tags in the 3,758 coho heads for an 84% recovery rate. Most of the recovered tags were released by the Oregon Department of Fish and Wildlife (61%) and various private hatcheries (27%). (Figure 23). Most of the tag recoveries came from the Columbia River Basin and private hatchery releases.

NOTE: THE ABOVE INFORMATION CANNOT BE USED TO ESTIMATE STOCK CONTRIBUTION SINCE TAGGING IS NOT REPRESENTATIVE OF STOCKS, AND MOST STOCKS OF WILD FISH HAVE NO TAGGING PROGRAMS OR POPULATION ESTIMATORS ASSOCIATED WITH THEM.

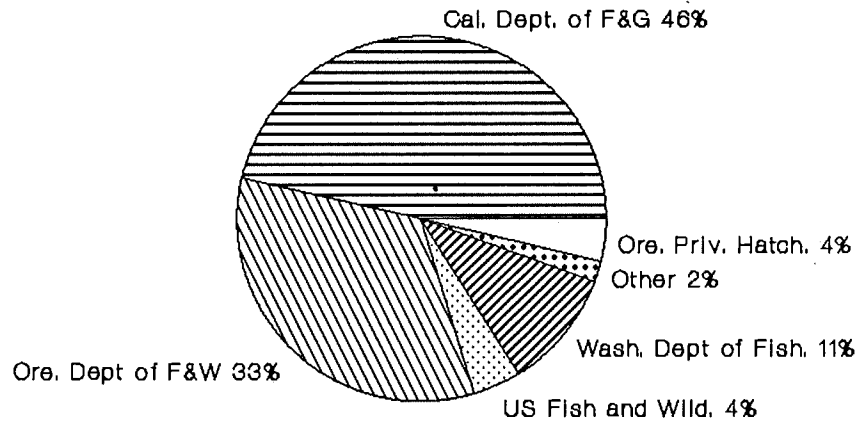
ACKNOWLEDGMENTS

Almost everyone in the Ocean Salmon Management Program at one time or another provided assistance to the sampling project. However, we especially appreciate the help of sampling coordinators Mark Vargas and David Nuzum and all seasonal samplers. Special recognition also goes to the Data Management Project Leader Phil Flanders and his assistant Donna Lamb for help in accessing the data and general assistance throughout the sampling year. Marie Jones did the word processing and her help is appreciated.

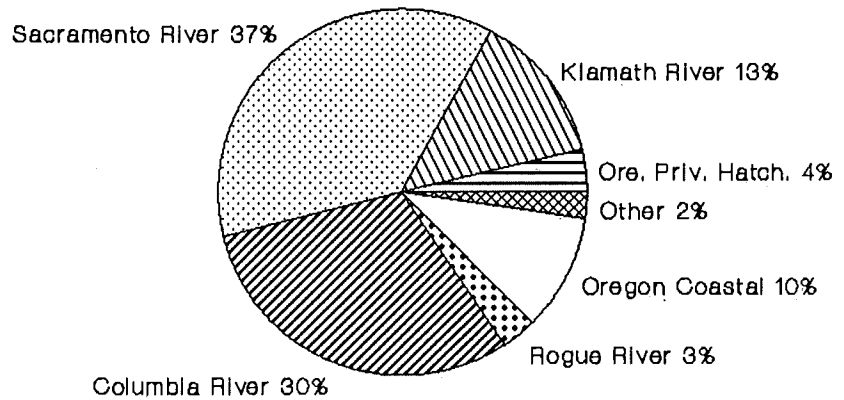
Table 18. Chinook coded-wire tag sampling from the ocean recreational fishery, by port and month, 1990.

Port	May	June	July	August	September	October	Total
<u>Columbia R.</u>							
Total Catch	-	100	928	2,208	87	-	3,323
No. Sampled	-	44	415	797	31	-	1,287
% Sampled	-	44%	45%	36%	-	-	39%
No. Ad Marks	-	0	15	48	-	-	63
<u>Garibaldi</u>							
Total Catch	0	22	357	359	255	≤100	993
No. Sampled	0	11	166	139	82	-	398
% Sampled	0	50%	46%	39%	32%	-	40%
No. Ad Marks	0	1	7	11	0	-	9
<u>Pacific City</u>							
Total Catch	-	32	133	37	23	-	225
No. Sampled	-	25	96	23	23	-	167
% Sampled	-	78%	72%	62%	100%	-	74%
No. Ad Marks	-	1	5	2	2	-	10
<u>Depoe Bay</u>							
Total Catch	8	50	398	209	46	-	711
No. Sampled	4	28	175	95	24	-	326
% Sampled	50%	56%	44%	45%	52%	-	46%
No. Ad Marks	0	4	13	8	1	-	26
<u>Newport</u>							
Total Catch	8	269	1,000	560	107	-	1,944
No. Sampled	5	131	350	201	35	-	722
% Sampled	63%	49%	35%	36%	33%	-	37%
No. Ad Marks	0	6	13	12	4	-	35
<u>Florence</u>							
Total Catch	-	55	258	444	235	-	992
No. Sampled	-	26	109	210	83	-	428
% Sampled	-	47%	42%	47%	34%	-	43%
No. Ad Marks	-	0	3	5	2	-	12
<u>Winchester Bay</u>							
Total Catch	6	396	1,752	1,370	283	-	3,810
No. Sampled	2	205	611	623	144	-	1,585
% Sampled	33%	52%	35%	45%	51%	-	37%
No. Ad Marks	0	7	19	22	2	-	50
<u>Coos Bay</u>							
Total Catch	7	181	766	495	306	-	1,755
No. Sampled	2	85	285	175	108	-	655
% Sampled	29%	47%	37%	35%	35%	-	37%
No. Ad Marks	0	7	11	8	1	-	27
<u>Brookings</u>							
Total Catch	393	4,622	6,519	1,168	45	-	12,747
No. Sampled	238	2,265	2,692	551	26	-	5,772
% Sampled	61%	49%	46%	47%	58%	-	45%
No. Ad Marks	12	90	89	13	0	-	204
<u>Total</u>							
Total Catch	422	5,727	12,114	6,850	1,387	-	26,500
No. Sampled	251	2,820	4,899	2,814	556	-	11,340
% Sampled	59	50%	40%	48%	44%	-	43%
No. Ad Marks	12	116	175	129	18	-	449

RELEASE AGENCY



BASIN OF RELEASE



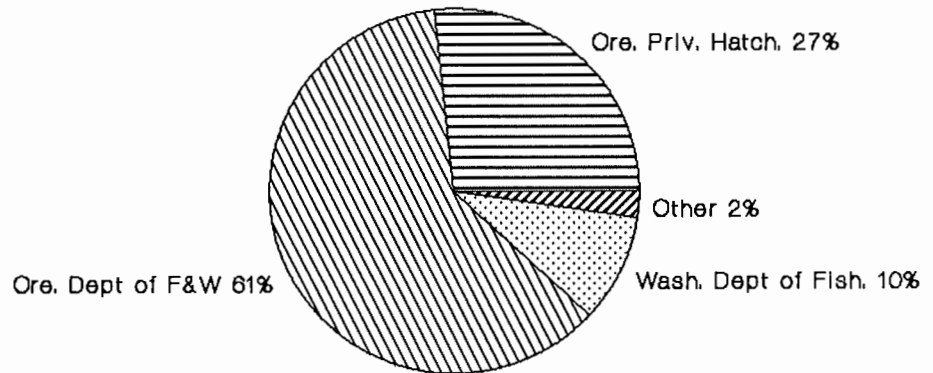
NOTE: Does not represent stock contribution rates, since tagging is not representative of all stocks.

Figure 22. Recoveries of chinook coded wire tags by release agency and basin of release from Oregon's recreational catch, 1990.

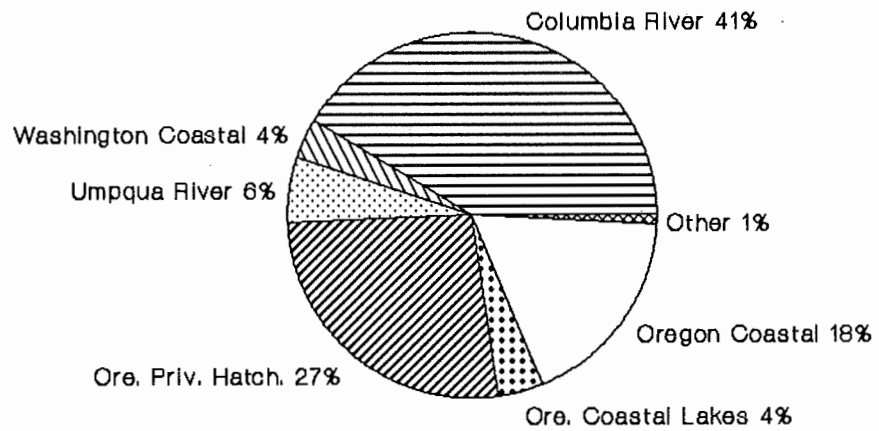
Table 19. Coho coded-wire tag sampling data from the ocean recreational fishery, by port and month, 1990.

Port	May	June	July	August	September	Total
<u>Columbia R.</u>						
Total Catch	-	3,511	14,686	16,573	1,307	36,077
No. Sampled	0	1,570	6,971	6,117	554	15,212
% Sampled	-	45%	47%	37%	41%	42%
No. Ad Marks	-	43	198	212	15	468
<u>Garibaldi</u>						
Total Catch	0	522	6,737	11,070	690	19,019
No. Sampled	0	348	3,141	4,370	238	8,097
% Sampled	0	67%	47%	39%	34%	43%
No. Ad Marks	0	15	132	185	8	340
<u>Pacific City</u>						
Total Catch	-	369	1,965	1,337	138	3,809
No. Sampled	-	285	1,491	830	127	2,733
% Sampled	-	77%	76%	62%	92%	72%
No. Ad Marks	-	10	63	54	7	134
<u>Depoe Bay</u>						
Total Catch	17	1,355	13,321	7,877	429	22,999
No. Sampled	14	685	5,781	3,630	209	10,319
% Sampled	82%	51%	43%	46%	49%	45%
No. Ad Marks	1	24	281	217	21	544
<u>Newport</u>						
Total Catch	142	4,494	24,524	11,023	812	40,996
No. Sampled	124	1,682	8,421	3,952	255	14,434
% Sampled	87%	37%	34%	36%	31%	35%
No. Ad Marks	8	68	397	202	10	685
<u>Florence</u>						
Total Catch	-	1,493	4,434	7,024	1,215	13,898
No. Sampled	-	724	2,110	3,144	496	6,474
% Sampled	-	48%	48%	45%	41%	46%
No. Ad Marks	-	39%	103	353	27	353
<u>Winchester Bay</u>						
Total Catch	14	7,508	14,341	12,808	1,263	35,930
No. Sampled	11	4,317	4,542	5,610	645	15,125
% Sampled	79%	57%	32%	44%	51%	42%
No. Ad Marks	2	164	185	621	35	621
<u>Coos Bay</u>						
Total Catch	9	3,188	4,794	3,341	646	11,961
No. Sampled	7	1,622	1,903	1,253	233	5,018
% Sampled	78%	51%	40%	38%	36%	42%
No. Ad Marks	1	47	99	60	15	222
<u>Brookings</u>						
Total Catch	95	8,357	5,014	1,808	43	15,316
No. Sampled	56	4,394	2,014	822	24	7,310
% Sampled	59%	53%	40%	45%	56%	48%
No. Ad Marks	1	223	128	35	0	387
<u>Total</u>						
Total Catch	277	30,938	89,675	72,861	6,543	200,294
No. Sampled	212	15,627	36,374	29,728	2,781	84,722
% Sampled	77%	51%	41%	46%	43%	42%
No. Ad Marks	13	633	1,586	1,939	138	3,758

RELEASE AGENCY



BASIN OF RELEASE



NOTE: Does not represent stock contribution rates, since tagging is not representative of all stocks.

Figure 23. Recoveries of coho coded wire tags by release agency and basin of release from Oregon's recreational catch, 1990.

REFERENCES

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- Pacific Fishery Management Council. 1978. Final Fishery Management Plan for Commercial and Recreational Salmon Fisheries Off the Coasts of Washington, Oregon, and California Commencing in 1978. 157 pp.
- Schindler, E.D., L. Osis, and R.J. Kaiser. 1991. The 1989 Oregon Ocean Salmon Fisheries. Oregon Department of Fish and Wildlife, Annual Report. 58 pp.

APPENDIX

OREGON DEPARTMENT FISH & WILDLIFE TROLL FORM

SAMPLER 0123456789 0123456789	PORT 01234 0123456789	DATE (M/DD/Y) 123456789010 0123 0123456789	PAGE 0123456789 0123456789 0123456789	DEALER NUMBER 0123456789 0123456789 0123456789 0123456789	DAYS FISHED 0123456789 0123456789
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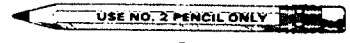
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Appendix figure 1. Troll op-scan form, 1990.

Appendix Table 1. History of actual Oregon ocean commercial troll fishery regulations, 1948-90.

AREA AND SEASON	SPECIES	SIZE, GEAR AND OTHER RESTRICTIONS
Prior to 1948	No restrictions	
1948 <u>Oregon Coast</u> 1/1 - 12/31 7/1 - 11/15	All except coho All salmon	size limit: chinook - 27", no gear restrictions. chinook - 27", coho - none.
1949-55 <u>Oregon Coast</u> 3/15 - 10/31 6/15 - 10/31	All except coho All salmon	Chin. 26". Chin. 26".
1956-75 <u>Oregon Coast</u> 4/15 - 10/31 6/15 - 10/31	All except coho All salmon	Chin. 26". Chin. 26"; coho 15" beginning in 1965.
1974-75 <u>Elk & Chetco River areas</u> 11/1 - 12/31	All except coho	Chin. 26" - state waters only.
1976 <u>North of Tillamook Head</u> 5/1 - 6/14 7/1 - 9/15	All except coho All salmon	Chin. 28"; until 6/6; then 26". Chin. 26"; coho, 16".
<u>South of Tillamook Head</u> 5/1 - 6/14 6/15 - 10/31	All except coho All salmon	Chin. 26"; barbless hooks, except on whole bait or plugs. Chin. 26"; coho, 16".
<u>Elk & Chetco River areas</u> 11/1 - 11/30	All except coho	Chin. 26" - state waters only
1977 as above	as above	Chin. 28" N. of Tillamook Head; 26" S. of Tillamook Head. Coho 16". Gear restrictions as above.
1978 Area boundary moved from Tillamook Head to Cape Falcon	as above	
1979 <u>North of Cape Falcon</u> 5/1 - 5/31 7/1 - 24; 8/4 - 31	All except coho All salmon	Chin. 28"; barbless hooks, except on whole bait or plugs. Chin. 28"; coho 16".
<u>South of Cape Falcon</u> 5/1 - 5/31 7/1 - 9/3 9/4 - 10/31	All except coho All salmon All except coho	Chin. 26"; barbless hooks except on whole bait or plugs. Chin. 26"; coho 16". Chin. 26".
<u>Elk & Chetco River areas</u> 11/1 - 11/30	All except coho	Chin. 26". State waters only.
1980 <u>North of Cape Falcon</u> 5/1 - 5/31 7/15 - 9/8	All except coho All salmon	Chin. 28"; barbless hooks, except on whole bait or plugs. Chin. 28"; coho 16".
<u>South of Cape Falcon</u> 5/1 - 5/31	All except coho	Chin. 26"; barbless hooks, except on whole bait or plugs.
<u>Cape Falcon to Cape Blanco</u> 6/16 - 6/30	All except coho	Chin. 26"; whole bait, or plugs 6" or longer.
<u>South of Cape Falcon</u> 7/15 - 9/8 9/9 - 10/31	All salmon All except coho	Chin. 26"; coho 16". Chin. 26".
<u>Elk & Chetco River areas</u> 11/1 - 11/30	All except coho	Chin. 26". State waters only.
1981 <u>North of Cape Falcon</u> 5/1 - 5/31 7/15 - 8/21 8/22 - 8/24	All except coho All salmon All salmon	Chin. 28", barbless hooks, except on whole bait or plugs. Chin. 28"; coho 16". Chin. 28"; coho 16". State waters only.
<u>South of Cape Falcon</u> 5/1 - 5/31 7/1 - 8/21 8/22 - 8/24	All except coho All salmon All salmon	Chin. 26"; barbless hooks, except on whole bait or plugs. Chin. 26"; coho 16". Chin. 26"; coho 16". State waters only.
<u>C. Falcon to Cape Sebastian</u> 8/22 - 8/24 8/25 - 9/8	All except coho All except coho	Chin. 26"; whole bait, or plugs 5" or larger. Chin. 26"; whole bait, or plugs 5" or larger. State waters only.
<u>South of Cape Falcon</u> 9/9 - 10/31	All except coho	Chin. 26".
<u>Elk & Chetco River areas</u> 11/1 - 11/30	All except coho	Chin. 26". State waters only.

Appendix Table 1 continued

AREA AND SEASON	SPECIES	SIZE, GEAR AND OTHER RESTRICTIONS
1982 <u>North of Cape Falcon</u>		
5/1 - 5/31	All except coho	Chin. 28"; barbless hooks, except on whole bait or plugs
7/1 - 7/8	All salmon	Chin. 28"; coho 16".
<u>South of Cape Falcon</u>		
5/1 - 5/31	All except coho	Chin. 26"; barbless hooks, except on whole bait.
6/1 - 6/15	All except coho	Chin. 26"; whole bait, or plugs not less than 5" long.
7/1 - 7/12	All salmon	Chin. 26"; coho 16".
7/13 - 9/5	All except coho	Chin. 26"; whole bait, or plugs not less than 5" long.
9/6 - 10/31	All except coho	Chin. 26"; barbless hooks, except on whole bait or plugs.
<u>South of Cape Blanco</u>		
5/1 - 6/8	All except coho	Chin. 26"; whole bait, or plugs not less than 5" long.
<u>Elk & Chetco River areas</u>		
11/1 - 11/30	All except coho	Chin. 26". State waters only.
1983 <u>North of Cape Falcon</u>		
5/1 - 5/31	All except coho	Chin. 28"; barbless hooks, except on plugs not less than 5".
7/1 - 7/31	All salmon	Chin. 28"; coho, 16"; only plugs not less than 6". Must land 2 chin. for each coho retained.
<u>Columbia River S. Jetty to Cape Falcon</u>		
8/10 - 9/8	All salmon	Chin. 28"; coho 16"; open out to 10 miles only.
<u>Cape Falcon to Cape Blanco</u>		
5/1 - 5/31	All except coho	Chin. 26"; barbless hooks, except on whole bait or plugs (not less than 5").
6/1 - 6/15	All except coho	Chin. 26"; whole bait, or plugs not less than 5" long.
9/5 - 10/31	All except coho	Chin. 26".
9/5 - 10/31	All except coho	Chin. 26".
<u>Cape Falcon to Cape Kiwanda</u>		
8/1 - 9/4	All salmon	Chin. 26"; coho 16".
<u>Cape Kiwanda to Heceta Head</u>		
7/1 - 7/25; 8/1 - 9/4	All Salmon	Chin. 26"; coho 16".
<u>Cape Perpetua to Cape Blanco</u>		
7/26 - 7/31	All except coho	Chin. 26"; whole bait or plugs not less than 5".
<u>Heceta Head to Cape Blanco</u>		
8/1 - 9/9	All except coho	Chin. 26"; whole bait, or plugs not less than 5".
<u>Cape Blanco to OR/CA border</u>		
5/16 - 5/31	All except coho	Chin. 26"; barbless hooks only, not more than 6 troll lines
6/1 - 6/15	All except coho	Chin. 26"; whole bait, or plugs not less than 5" long.
7/1 - 7/25	All salmon	Coho 16".
7/26 - 8/31	All except coho	Chin. 26"; whole bait, or plugs not less than 5" long.
9/1 - 9/15	All except coho	Chin. 26". Open area is 12 x 24 mile rectangle around mouth of Rogue River.
10/1 - 10/31	All except coho	Chin. 26".
<u>Cape Blanco to Humbug Mtn.</u>		
11/1 - 11/30	All except coho	Chin. 26". State waters only.
1984 <u>North of Cape Falcon</u>		
5/1 - 5/7	All except coho	Chin. 28"; barbless hooks.
<u>Columbia River S. Jetty to Cape Falcon</u>		
8/4 - 8/6	All salmon	Chin. 28"; coho 16"; barbless hooks.
<u>Cape Falcon to Cape Blanco</u>		
5/1 - 6/15; 7/1 - 8/31	All except coho	Chin. 26"; barbless hooks.
9/1 - 9/21	All except coho	Chin. 26"; state waters only. Contravention of fed. regulation.
<u>Manhattan Beach to Pyramid Rock (Tillamook)</u>		
10/1 - 10/31	All except coho	Chin. 26"; barbless hooks. State waters only.
<u>Cape Blanco to OR/CA border</u>		
5/16 - 6/6; 7/16 - 8/22	All except coho	Chin. 26"; barbless hooks.
<u>Cape Blanco to Humbug Mtn.</u>		
10/1 - 11/30	All except coho	Chin. 26"; state waters only; barbless hooks.
1985 <u>North of Cape Falcon</u>		
5/1 - 5/14; 5/21 - 5/31	All except coho	Chin. 28"; barbless hooks, except on whole bait or plugs.

Appendix Table 1 continued

AREA AND SEASON	SPECIES	SIZE, GEAR AND OTHER RESTRICTIONS
(1985 continued)		
<u>Columbia River S. Jetty to Cape Falcon</u> 8/21	All salmon	Chin. 28"; coho 16"; barbless hooks, except on whole bait or plugs.
<u>Cape Falcon to Cape Blanco</u> 5/1 - 6/30	All except coho	Chin. 26"; barbless hooks, except on whole bait or plugs.
7/1 - 7/26	All salmon	Chin. 26"; coho 16"; barbless hooks. One more coho than chinook may be kept, provided at least 1 chinook is kept.
7/27 - 10/31	All except coho	Chin. 26"; barbless hooks.
<u>Tower Rock to Cape Blanco</u> 11/1 - 11/30	All except coho	Chin. 26"; barbless hooks. State waters only.
<u>Cape Blanco to Humbug Mtn.</u> 10/1 - 11/30	All except coho	Chin. 26"; barbless hooks. State waters only.
1986		
<u>North of Cape Falcon</u> 5/1-10; 5/14-17; 5/24-27; 5/30-31	All except coho	Chin. 28"; barbless hooks. Columbia River mouth conservation zone closed.
8/2-3; 8/7-9	All salmon	Chin. 28"; Coho 16". Barbless hooks.
<u>Cape Falcon to Cape Perpetua</u> 5/1 - 6/30	All except coho	Chin. 26"; barbless hooks.
7/1-20; 7/23-24	All salmon	Chin. 26"; coho 16"; barbless hooks. Single daily landing or possession of up to 50 coho. No additional coho can be landed or possessed unless chinook are also landed at a ratio of at least 1 chinook for every 2 coho.
7/25 - 10/31	All except coho	Chin. 26"; barbless hooks.
<u>Twin Rocks to Pyramid Rock (Tillamook)</u> 11/1 - 15	All except coho	Chin. 26"; barbless hooks. State waters only.
<u>Cape Perpetua to Cape Blanco</u> 5/1 - 6/30	All except coho	Chin. 26"; barbless hooks.
7/1 - 20	All salmon	Chin. 26"; Coho 16"; barbless hooks. No coho could be landed without landing chinook at a ratio of at least 1 chinook for each 2 coho.
7/23 - 24	All salmon	Same regulations as in Cape Falcon to Cape Perpetua (for 7/1-24 see above).
7/25 - 10/31	All except coho	Chin. 26"; barbless hooks.
<u>Sisters Rocks to Chetco Point</u> 5/1 - 6/6	All except coho	Chin. 26"; barbless hooks. Open only within 6 nautical miles of shore.
<u>Cape Blanco to OR/CA border</u> 6/16 - 19; 6/23 - 26 6/30 - 7/5; 7/17-24	All salmon	Chin. 26"; Coho 22"; barbless hooks. At least one chinook must be possessed or landed for each 2 coho possessed or landed.
7/25 - 8/26	All except coho	Chin. 26"; barbless hooks.
<u>Sisters Rock to Mack Arch</u> 8/29	All except coho	Chin. 26"; barbless hooks. Open only within 6 nautical miles of shore.
<u>Cape Blanco to Humbug Mtn.</u> 10/1 - 11/26	All except coho	Chin. 26"; barbless hooks. State waters only.
1987		
<u>North of Cape Falcon</u> 5/1-10; 5/14-15	All except coho	Chin. 28"; barbless hooks. Columbia River Mouth Conservation Zone closed. Chinook harvested in this fishery must be landed north of Cape Falcon unless reported to the U.S. Coast Guard.
7/25-26	All salmon	Chin. 28"; coho 16"; barbless hooks. Landing restrictions as above. Columbia River Mouth Conservation Zone closed; nearshore area closure 0 to 3 miles from Tillamook Head to Red Buoy Line and 0 to 10 miles between Red Buoy Line and Queets River.
<u>Cape Falcon to Cape Perpetua</u> 5/1 - 7/14	All except coho	Chin. 26"; barbless hooks.
7/15-28; 8/1-28	All salmon	Chin. 26"; coho 16"; barbless hooks. Single daily possession or landing of up to 100 coho/vessel. At least 1 chinook required for each 2 coho over 100.
<u>Cape Falcon to Cape Blanco</u> 8/29 - 9/15	All salmon	Chin. 26"; coho 16"; barbless hooks. 200 coho may be possessed or landed without chinook restrictions. Over 200 coho, at least 1 chinook must be possessed or landed for each 2 coho possessed or landed.

Appendix Table 1 continued

AREA AND SEASON	SPECIES	SIZE, GEAR AND OTHER RESTRICTIONS
(1987 continued) 9/16 - 10/31	All except coho	Chin. 26"; barbless hooks. All commercial salmon fishing closed 9/16-18 from Cape Arago to Cape Blanco.
<u>Cape Perpetua to Cape Blanco</u> 5/1 - 6/30 7/1-28; 8/1-28	All except coho All salmon	Chin. 26"; barbless hooks. Chin. 26"; coho, 16"; barbless hooks. At least 1 chinook must be possessed or landed for each 2 coho possessed or landed except that 1 coho may be possessed or landed without having a chinook.
<u>Sisters Rocks to Chetco Point</u> 5/1-14	All except coho	Chin. 26"; barbless hooks.
<u>Cape Blanco to OR/CA border</u> 6/1-3; 6/7-10; 6/14-25	All salmon	Chin. 26"; coho 22"; barbless hooks. At least 1 chinook must be possessed or landed for each 1 coho except that 1 coho may be possessed or landed without having a chinook.
<u>Cape Blanco to Humbug Mtn.</u> 10/1 - 11/30	All except coho	Chin. 26"; barbless hooks. State waters fishery.
1988 <u>North of Cape Falcon</u> 5/1 - 6/14	All except coho	Chin. 28"; barbless hooks. Columbia River mouth conservation zone closed.
<u>Cape Falcon to Orford Reef Red Buoy</u> 5/1 - 6/30	All except coho	Chin. 26"; barbless hooks.
<u>Cape Falcon to Cascade Head</u> 7/1 - 8/19	All salmon	Chin. 26"; coho 16"; barbless hooks. From 7/1-13 mixed loads of chinook and coho or coho only loads could not be landed between Cascade Head and Cape Arago unless the load met the possession and landing ratios for that area.
8/20 - 10/31	All except coho	Chin. 26"; barbless hooks.
<u>Cascade Head to Cape Arago</u> 7/1 - 13	All salmon	Chin. 26"; coho 16"; barbless hooks. At least 1 chinook must be possessed or landed for each 2 coho possessed or landed except there was a single daily possession or landing per vessel of 2 coho w/o the ratio requirement. Mixed loads of chinook and coho or coho only loads must be delivered in the sub-area.
7/16 - 8/19	All salmon	As above but no ratio requirement.
8/20 - 10/31	All except coho	Chin. 26"; barbless hooks.
<u>Cape Arago to Orford Reef Red Buoy</u> 7/16 - 8/19	All salmon	Chin. 26"; coho 16"; barbless hooks. No ratio requirement.
8/20 - 31; 9/16 - 10/31	All except coho	Chin. 26"; barbless hooks.
<u>Sisters Rocks to Chetco Point</u> 5/1 - 4	All except coho	Chin. 26"; barbless hooks. From shore out to 6 miles only.
<u>Humbug Mtn. to Punta Gorda</u> 6/5 - 7	All salmon	Chin. 26"; coho 22"; barbless hooks. Sun. through Wed. only.
<u>Sisters Rocks to Mack Arch</u> 9/1 - 14	All except coho	Chin. 26"; barbless hooks.
<u>Orford Reef Red Buoy to Humbug Mountain</u> 10/1 - 31	All except coho	Chin. 26"; barbless hooks. State waters only.
<u>Cape Blanco to Humbug Mtn.</u> 11/1 - 30	All except coho	As above.
1989 <u>North of Cape Falcon</u> 5/1 - 6/8; 6/13 - 15	All except coho	Chin. 28"; barbless hooks. Columbia River mouth conservation zone closed.
8/21; 8/24 - 9/10	All salmon	Chin. 28"; coho 16"; barbless hooks. Columbia River Mouth Conservation Zone closed. Open south of Columbia River 8/21; and extended north to Leadbetter Point from 8/24. Daily landing limit of 40 coho and 4 chinook in effect through 8/27; daily landing of 40 coho and 8 chinook from 8/28 through 9/10. All salmon must be landed within this area.

Appendix Table 1 continued

AREA AND SEASON	SPECIES	SIZE, GEAR AND OTHER RESTRICTIONS
(1989 continued)		
<u>Cape Falcon to Cascade Head</u>		
5/1 - 7/11; 8/18 - 10/31	All except coho	Chin. 26"; barbless hooks.
7/12 - 7/14	All salmon	Chin. 26"; coho 16"; barbless hooks. Mixed loads of coho and chinook, or coho only must be landed in this area.
7/18 - 8/17	All salmon	Chin. 26"; coho 16"; barbless hooks. A daily landing limit of 50 coho through 8/13; from 8/14 through 17 at least 1 chinook must be possessed or landed for each 2 coho possessed or landed; except that if no chinook were possessed, a single daily landing of 2 coho was permitted. Mixed loads of coho and chinook, or coho only must be landed in this area.
<u>Cascade Head to Orford Reef</u>		
<u>Red Buoy</u>		
5/1 - 6/23; 8/18 - 10/31	All except coho	Chin. 26"; barbless hooks. The subarea from Cape Arago to Port Orford Reef Red Buoy was closed 8/18 - 31.
7/1 - 14	All salmon	Chin. 26"; coho 16"; barbless hooks. A daily landing limit of 50 coho, plus 3 coho for each chinook landed. Mixed loads of chinook and coho, or coho only must be landed in this area. All chinook must be delivered with the coho.
7/18 - 8/17	All salmon	Chin. 26"; coho 16"; barbless hooks. At least 1 chinook must be landed for each 2 coho, except that a single daily landing of 2 coho without any chinook is permitted. Mixed loads of coho & chinook, or coho only loads must be landed in this area. All chinook must be delivered with the coho.
<u>Orford Reef Red Buoy to Humbug Mountain</u>		
10/1 - 31	All except coho	Chin. 26"; barbless hooks. State waters only.
<u>Cape Blanco to Humbug Mountain</u>		
11/1 - 30	All except coho	As above
<u>Sisters Rocks to House Rock</u>		
5/1 - 2	All except coho	Chin. 26"; barbless hooks. Open from 0-6 nautical miles only.
<u>Sisters Rocks to Mack Arch</u>		
9/1 - 14	All except coho	As above
<u>Humbug Mountain to OR/CA Border</u>		
6/5 - 8	All salmon	Chin. 26"; coho 22"; barbless hooks. A single daily landing of 20 chinook per day. All salmon must be delivered in this area.
8/18 - 20; 8/22 - 31	All except coho	As above.
1990 <u>US-Canada border to Cape Falcon</u>		
5/1 - 5/14; 5/18 - 5/27; 5/31 - 6/2; 6/8 - 6/11; 6/14	All except coho	Chin. 28"; barbless hooks. Columbia River Mouth Conservation Zone closed.
<u>US-Canada border to Cape Falcon</u>		
8/18 - 21; 8/25 - 26	All	Chin. 28"; coho 16"; barbless hooks. Columbia River Mouth Conservation Zone closed. Open period restriction of 20 chinook & 200 coho per vessel. All fish must be landed and delivered in the area.
<u>Leadbetter Point to Cape Falcon</u>		
8/30-9/14; 9/18-19; 9/22-10/15	All	Chin. 28"; coho 16"; barbless hooks. Columbia River Mouth Conservation Zone closed. Single daily landing of 50 coho, with one additional coho for each chinook landed. From 9/22 - 10/15 daily landing increased to 100 coho. All salmon must be landed in the area.
<u>Cape Falcon to Humbug Mtn.</u>		
5/1 - 6/25; 9/1 - 10/31	All except coho	Chin 26"; barbless hooks.
<u>Cape Falcon to Cascade Head</u>		
7/4 - 7/15	All except coho	Chin. 26"; barbless hooks.
7/16 - 8/31	All	Chin 26"; coho 16"; barbless hooks. Single daily landing of 50 coho plus 1 coho for each chinook. All coho must be landed in area or in adjacent closed areas.
<u>Cascade Head to Humbug Mtn.</u>		
7/4 - 31 (Cape Arago to Humbug Mtn. closed 7/10-17 & 7/24-31)	All	Chin. 26"; coho 16"; barbless hooks. At least one chinook must be landed for each coho, except a landing of 1 coho and no chinook is permitted. Loads with coho must be delivered in this area.
8/1 - 31 (Cape Arago to Humbug Mtn. closed 8/7-14)	All except coho	Chin. 26"; barbless hooks.
<u>Sisters Rocks to House Rock</u>		
5/1 - 24	All except coho	Chin 26"; barbless hooks. Open 0-6 miles from shore. All salmon must be landed in this area.

Appendix Table 1 continued

AREA AND SEASON	SPECIES	SIZE, GEAR AND OTHER RESTRICTIONS
(1990 continued) <u>Sisters Rocks to Punta Gorda</u> 8/1 - 6; 8/8 - 31	All except coho	Chin 26"; barbless hooks. All salmon must be landed in this area.
<u>Sisters Rocks to Mack Arch</u> 9/3 - 16	All except coho	Chin 26"; barbless hooks. All salmon must be landed in this area.
<u>43°30'00"N to Cape Arago</u> 11/1 - 14	All	Chin. 26"; coho 16"; barbless hooks. Open 0-3 miles from shore. Experimental fishery 10 vessels selected through drawing. All salmon must be landed into Coos Bay.

Appendix Table 2. Summary of Oregon ocean commercial troll effort and landings of chinook and coho by area of catch, 1979-90.

Year	Area of Catch									Total
	Col. R. 2	Tillamook 3	Newport 4	Coos Bay 5	Brookings 6	OR Subtotal	Alaska 8	Wash. 1	Calif. 7	
<u>EFFORT (Boat Days)</u>										
1979	2,400	6,300	12,800	16,800	9,900	48,200	0	600	100	48,800
1980	1,700	6,000	10,700	12,400	8,300	39,100	<100	700	30	39,900
1981	2,500	8,600	11,000	13,400	9,300	44,800	0	200	100	45,200
1982	800	3,600	5,800	13,600	8,900	32,800	0	700	400	33,900
1983	1,100	3,000	7,100	6,900	3,700	21,700	0	200	300	22,200
1984	500	500	1,900	2,300	2,600	7,800	0	100	<100	7,900
1985	600	1,400	4,100	14,000	600	20,800	0	300	<100	21,100
1986	1,200	3,700	8,600	15,700	3,200	32,400	0	<100	<100	32,500
1987	200	7,300	8,700	21,000	2,000	39,300	0	100	<100	39,500
1988	300	10,500	12,500	26,300	1,400	50,800	0	100	100	51,100
1989	900	7,800	9,300	22,900	1,300	42,200	0	<100	<100	42,300
1990	700	5,100	4,400	15,300	400	25,900	0	100	<100	25,900
<u>Chinook</u>										
1979	5,900	5,000	38,600	68,700	123,800	242,000	0	2,600	900	245,500
1980	5,600	7,800	48,700	74,800	68,400	205,300	300	2,900	900	209,400
1981	8,400	12,200	27,100	24,400	86,000	158,200	0	1,000	1,300	160,400
1982	7,300	9,000	27,600	109,200	69,500	222,600	0	7,000	3,100	232,600
1983	5,400	4,900	24,000	19,800	22,000	76,100	0	1,600	1,900	79,600
1984	1,500	1,600	18,700	15,400	24,600	61,800	0	200	300	64,300
1985	5,500	3,300	41,700	155,600	6,100	212,200	0	3,600	800	216,600
1986	6,000	14,000	88,700	238,900	53,500	401,200	0	400	500	402,000
1987	4,600	41,400	87,700	350,400	39,900	524,000	0	3,700	1,800	529,400
1988	1,600	32,800	129,000	268,200	31,600	463,200	500	1,400	4,600	469,700
1989	2,900	30,400	70,600	232,400	17,000	353,200	0	200	100	353,400
1990	2,200	12,400	40,800	174,400	2,300	232,200	0	300	<100	232,400
<u>Coho</u>										
1979	48,700	77,900	211,800	263,100	101,200	702,700	0	11,300	600	714,600
1980	23,500	80,600	137,300	99,200	33,500	374,200	1,800	7,200	40	383,300
1981	41,900	160,400	192,400	161,400	53,500	609,600	0	10,400	300	620,300
1982	24,100	114,800	117,800	227,900	22,300	506,800	0	14,100	1,200	522,200
1983	4,900	63,300	118,000	109,700	22,500	318,400	0	100	1,300	319,800
1984	13,900	0	0	0	0	13,900	0	200	0	14,000
1985	18,300	1,600	12,600	29,400	200	62,100	0	21,900	<100	84,100
1986	45,800	95,600	193,800	85,300	19,100	439,600	0	0	0	439,600
1987	7,400	74,700	83,000	177,000	4,100	346,200	0	7,500	300	354,000
1988	0	172,200	252,500	196,400	1,200	622,300	<100	0	800	623,100
1989	21,100	136,300	137,800	159,500	1,000	455,700	0	0	<100	455,700
1990	10,800	53,200	14,000	43,000	0	121,100	0	900	<100	122,000

Appendix Table 3. Oregon commercial troll effort and landings of chinook and coho in number of fish by month, 1979-90^a.

	April	May	June	July	Aug	Sept	Oct	Nov ^b	Total
EFFORT (Boat Days)									
1979	-	1,400	<100 ^c	21,500	21,700	1,300	200	800	48,000
1980	-	2,100	3,700 ^d	12,100	14,600	4,600	2,300	500	39,900
1981	-	3,300 ^e	-	21,300	16,700	1,600	1,900	500	45,200
1982	-	2,300	2,100	18,800	5,600	2,800	1,500	600	33,900
1983	-	1,600	1,900	12,200	4,100	1,200	1,100	100	22,200
1984	-	400	400	2,100	4,300	200	300	200	7,900
1985	-	3,100	2,100	6,300	6,600	1,900	900	200	21,100
1986	-	4,000	4,000	14,300	6,800	2,000	1,300	100	32,500
1987	-	3,600	3,900	16,300	7,300	5,500	2,700	300	39,500
1988	-	4,700	6,700	17,000	14,100	3,600	4,500	400	51,100
1989	-	6,300	7,100	13,600	8,800	3,500	2,200	700	42,300
1990	-	2,900	3,700	8,300	8,200	1,800	1,000	<100	25,900
Chinook									
1979	-	11,000	200 ^c	73,600	119,500	13,200	25,200	2,600	245,500
1980	-	25,800	29,700 ^d	47,700	64,000	25,200	16,000	1,000	209,400
1981	-	28,600 ^e	-	34,900	65,700	16,900	13,200	1,200	160,400
1982	-	23,000	14,800	125,400	46,100	15,000	6,900	1,400	232,600
1983	-	9,500	16,300	34,100	11,500	2,700	4,600	900	79,600
1984	-	4,600	2,400	17,800	36,900	700	1,000	900	64,300
1985	-	39,900	14,900	57,900	76,300	21,400	5,300	900	216,600
1986	-	37,200	50,000	138,500	115,100	33,900	26,500	800	402,000
1987	-	43,400	56,500	264,200	87,600	60,800	15,100	1,900	529,400
1988	-	62,600	100,100	100,500	133,800	26,600	44,300	1,700	469,700
1989	-	100,300	62,500	71,200	75,200	25,100	16,400	2,800	353,400
1990	-	15,500	33,000	106,000	64,700	9,000	4,200	<100	232,500
Coho									
1979	-	-	400 ^c	534,000	178,700	1,600	-	-	714,600
1980	-	-	-	228,700	137,500	17,100	-	-	383,300
1981	-	-	-	350,300	270,000	-	-	-	620,300
1982	-	-	-	522,200	-	-	-	-	522,200
1983	-	-	-	275,300	36,100	8,400	-	-	319,800
1984	-	-	-	-	14,000	-	-	-	14,000
1985	-	-	-	65,700	18,300	-	-	-	84,000
1986	-	-	12,000	381,800	45,800	-	-	-	439,600
1987	-	-	4,400	266,200	63,700	19,800	-	-	354,000
1988	-	-	1,600	387,800	233,800	-	-	-	623,100
1989	-	-	1,000	374,800	70,000	9,900	-	-	454,200
1990	-	-	-	82,300	33,100	6,200	300	-	122,000

^a Catch statistics 1987-89 are reported by calendar months; monthly effort totals for 1987-89 and catch and effort for 1979-86 are the sum of statistical weeks with closest fit to calendar months. Includes catches made off California, Washington, and Alaska and landed in Oregon.

^b Late season at mouth of Elk and Chetco Rivers only (initiated in 1974). Averages for November include only 1974-75.

^c Caught off California and landed in Oregon.

^d Totals for June 1980 include landings made through July 6.

^e Totals for May 1981 include landings made through June 7.

Appendix Table 4. Estimates of nominal ex-vessel value^a for Oregon troll salmon landings and average price per pound, 1971-90.

Year	Chinook		Coho		Total Value
	\$ Value	\$/lb	\$ Value	\$/lb	
1971	587,000	0.59	3,155,000	0.36	3,742,000
1972	982,000	0.75	2,475,000	0.51	3,457,000
1973	3,520,000	1.02	4,004,000	0.78	7,524,000
1974	2,412,000	1.05	5,525,000	0.76	7,937,000
1975	2,680,000	1.04	3,128,000	0.77	5,808,000
1976	3,410,000	1.77	11,458,000	1.26	14,868,000
1977	7,938,000	2.29	3,546,000	1.34	11,484,000
1978	3,584,000	1.89	3,756,000	1.35	7,340,000
1979	6,639,000	2.57	10,350,000	2.26	16,988,000
1980	5,259,000	2.42	2,926,000	1.34	8,185,000
1981	4,036,000	2.57	5,535,000	1.66	9,571,000
1982	6,094,000	2.59	3,801,000	1.40	9,895,000
1983	1,244,000	1.90	1,052,000	0.96	2,296,000
1984	1,514,000	2.75	118,000	1.67	1,632,000
1985	5,045,000	2.48	729,000	1.51	5,773,000
1986	5,976,000	1.77	1,978,000	1.04	7,954,000
1987	13,324,000	2.57	3,264,000	1.70	16,588,000
1988	13,923,000	3.17	7,614,000	2.28	21,537,000
1989	7,868,000	2.22	2,130,000	1.06	9,999,000
1990	5,453,000	2.50	1,008,000	1.59	6,461,000

^a Dressed weight value

Appendix Table 5. Recreational ocean salmon sampling rates at Oregon ports, 1977-90.

Port	Percentage of Catch Sampled ^a												
	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Astoria	29	35	20	40	42	44	31	57	38	39	49	44	42
Garibaldi	33	43	39	36	55	61	35	47	37	40	32	37	46
Pacific City	41	-	-	82	87	82	71	72	75	75	79	70	72
Depoe Bay	49	47	45	50	68	60	65	60	55	57	50	56	45
Newport	15	31	39	40	31	34	48	36	35	33	39	35	35
Florence	-	-	-	30	37	44	27	29	41	38	46	51	46
Winchester Bay	22	35	33	26	32	33	27	34	33	31	36	44	42
Coos Bay	51	47	49	57	63	47	54	48	50	54	46	46	41
Gold Beach	23	42	50	48	62	43	47	43	63	64	^b	-	-
Brookings	20	29	22	21	30	36	42	49	62	57	51	65	47
Coastwide percentage	27	37	34	39	44	42	42	47	44	44	43	43	42
Number of samplers	11	13	14	16	16	19	20	23	23	23	20	20	22
Sampler months	36	47	54	62	51	60	55	47	62	79	79	70	80

^a Percentage of total catch observed by samplers = number of salmon observed/estimated catch of salmon

Appendix Table 6. Summary of Oregon's recreational ocean salmon regulations, 1946-89.

Year	Season	Regulations
1946	All Year	3 fish/day; 9 in possession.
1947	All year	2 fish/day; 6 in possession
1948-54	All year	2 fish/day; 4 in possession; 20 fish annual limit.
1955-57	All year	2 fish/day; 4 in possession; 20 fish annual limit; 20" minimum size, both species.
1958-64	All year	2 fish/day; 4 in possession; 20 fish annual limit; 20" minimum size, both species, except 22" minimum size north of Tillamook Head (July 1-October 31).
1965-69	All year	3 fish/day; 6 in possession; 20 fish annual limit; 20" minimum size, both species.
1970-75	All year	3 fish/day; no possession limit; 40 fish annual limit; North of Tillamook Head, 20" minimum size both species. South of Tillamook Head, no size limits.
1976	4/10 -12/31	3 fish/day; 40 fish annual limit. North of Tillamook Head--Chinook, 24" minimum size; coho, 16" minimum size. South of Tillamook Head, no size limits.
1977	4/30 - 10/31	Same as in 1976.
	11/1-31	State waters off Elk and Chetco rivers--3 chinook/day; no size limit.
1978	4/29 - 10/31	3 fish/day; 40 fish annual limit. North of Cape Falcon--chinook, 24" minimum size; coho, 16" minimum size. South of Cape Falcon--chinook, 22" minimum size; coho, 16" minimum size.
	11/1-30	State waters off Elk and Chetco rivers--3 chinook/day; 22" minimum size.
1979	5/12 - 9/16	2 fish/day south of Cape Falcon; 3 fish/day north of Cape Falcon, of which only 2 may be chinook or coho; 40 fish annual limit. Size limits as in 1978.
	11/1-30	State waters off Elk and Chetco rivers--2 chinook/day; 22" minimum size.
1980	5/10 - 9/14 ^a	3 fish/day lowered to 2 fish/day on July 16; 40 fish annual limit. Size limits as in 1978.
	9/15 - 10/31	South of Cape Falcon; 2 chinook/day; 22" minimum size.
	11/1-30	State waters off Elk and Chetco rivers--as above.
1981	5/15 - 9/20 ^b	South of Cape Falcon; 2 fish/day; increased to 3 fish/day on August 14; 40 fish annual limit. Size limits as in 1978.
	5/23 - 9/7 ^b	North of Cape Falcon; 2 fish/day; 40 fish annual limit. Size limit as in 1978.
	9/21 - 10/31	South of Cape Blanco; 2 chinook per day; 22" minimum size.
	11/1-30	State waters off Elk and Chetco rivers--as above.
1982	5/28 - 6/11	Between Cape Blanco and Cape Falcon in state waters; first 2 chinook taken per day; barbless hook only.
	5/28 - 8/1 ^c	South of Cape Blanco--as above.
	6/12 - 8/1 ^c	Entire coast; 2 fish/day north of Cape Falcon; first 2 fish taken/day south of Cape Falcon, regardless of size. Size limit north of Cape Falcon same as in 1978. 40 fish annual limit.

Appendix Table 6 continued

Year	Season	Regulations
1982 cont.	8/2 - 10/31	South of Cape Blanco; first 2 chinook taken/day.
	11/1-30	State waters off Elk and Chetco rivers; first 2 chinook taken/day.
1983	5/28 - 9/18	South of Cape Blanco; first 2 fish taken/day regardless of size. 40 fish annual limit.
	6/18 - 9/18	Entire coast south of Cape Falcon; as above.
	6/18 - 9/11	North of Cape Falcon; 2 fish/day
	9/19 - 10/31	South of Cape Blanco; first 2 chinook taken/day.
	11/1-30	State waters off Elk River; first 2 chinook taken/day.
1984	7/9 - 8/7	South of Cape Falcon; 2 fish/day; 40 fish annual limit. Minimum size 20". Single-point barbless hooks.
	7/28 - 8/8	Cape Falcon to Columbia River, South Jetty; 2 coho/day; 40 fish annual limit. Minimum size 16". No chinook allowed. Single-point barbless hooks.
	8/9-24	Cape Blanco to OR/CA border; 2 chinook/day; 20" minimum size. Single-point barbless hooks.
	8/25 - 9/3	Cape Falcon to Cape Blanco; 1 fish/day; 20" minimum size. Single-point barbless (State waters only) hooks. (Cape Blanco to OR/CA border) 2 fish/day, one of which can be coho; 20" minimum size. Single-point barbless hooks.
	9/4 - 10/31	Cape Blanco to OR/CA border; 2 chinook/day; 20" minimum size. Single-point barbless hooks.
	9 15-21 ^d	Manhattan Beach to Pyramid Rock off Tillamook Bay; 2 chinook/day; 20" minimum size. (State waters only) Single-point barbless hooks.
	11/1-30	Cape Blanco to Humbug Mountain-Elk River; 2 chinook/day; 20" minimum size. (State waters only) Single-point barbless hooks.
1985	5/25-31	OR-CA border to Cape Blanco; first 2 fish taken per day; no more than 6 fish may be retained in 7 consecutive days.
	7/1-9/30	OR-CA border to Cape Falcon--as above.
	6/30 - 8/22	Cape Falcon to Leadbetter Pt.; 2 fish per day; 40 fish annual bag limit. Minimum size 24" for chinook, 16" for coho and other salmon. Barbless hooks. Area closure: Red Buoy line on Columbia R. mouth north to Klipsan Beach. Fishery closed Fridays and Saturdays.
	9/3 - 10/31	OR-CA border to Cape Blanco; first 2 salmon except coho taken per day; no more than 6 fish may be retained in 7 consecutive days.
	9/15 - 10/31	Twin Rocks to Pyramid Rock off Tillamook Bay, state waters only; first 2 salmon except coho taken per day; no more than 6 fish may be retained in 7 consecutive days.
	10/1 - 11/30	Tower Rock to Humbug Mt., state waters near Elk R.; first 2 salmon except coho taken per day; no more than 6 fish may be retained in 7 consecutive days.
1986	5/24 - 9/7	OR-CA border to Cape Blanco; from May 24 through June 22, not more than 1 coho and 1 chinook per day; after June 22, 2 salmon of any species. Not more than 6 fish may be retained in 7 consecutive days. Minimum size 20" for all salmon; barbless hooks.

Appendix Table 6 continued

Year	Season	Regulations
1986 cont.	5/24 - 5/26 and 6/28 - 8/13	Cape Blanco to Cape Falcon; first 2 fish hooked per day; not more than 6 fish in 7 consecutive days. On July 27, Sundays and Mondays were closed to salmon fishing. On July 29 possession limit reduced to not more than 2 fish in 7 consecutive days.
	6/29 - 8/19	Cape Falcon to Leadbetter Point; 2 fish per day; minimum size 24" for chinook and 16" for other salmon. Barbless hooks. Area closure: Red Buoy line at Columbia River mouth north to Klipsan Beach. Fishery closed Fridays and Saturdays.
	9/15 - 11/15	Twin Rocks to Pyramid Rock off Tillamook Bay in state waters; first 2 salmon except coho per day; not more than 6 fish in 7 consecutive days; barbless hooks allowed.
	10/1 - 11/26	South of Cape Blanco to Humbug Mountain in state waters; 2 salmon except coho per day; not more than 6 fish in 7 consecutive days; barbless hooks only. Minimum size 20".
	10/1-31	South of Bird Island to OR-CA border in state waters; 2 salmon except coho per day; not more than 6 fish in 7 consecutive days; barbless hooks only. Minimum size 20".
1987	5/23 - 9/13	Cape Blanco to OR/CA Border; 2 salmon per day; not more than 6 salmon may be retained in 7 consecutive days; 40 salmon annual limit, minimum size 20". Single point barbless hooks.
	6/13 - 9/13	Cape Falcon to Cape Blanco; First 2 salmon per day; not more than 6 salmon may be retained in 7 consecutive days; 40 salmon annual limit.
	6/29 - 8/19	Leadbetter Point to Cape Falcon; 2 salmon per day; 40 salmon annual limit. Open Sunday through Thursday only. Area closures inside 3 miles from Cape Falcon to Red Buoy Line, 0-200 miles from Red Buoy line to Klipsan Beach, and inside 3 miles from Klipsan Beach to Leadbetter Point. Minimum size 24" for chinook and 16" for coho. Single point barbless hooks.
	9/15 - 10/31	Twin Rocks to Pyramid Rock, state waters off Tillamook Bay; first 2 salmon except coho per day, not more than 6 salmon may be retained in 7 consecutive days; 40 salmon annual limit.
	10/1 - 11/30	Cape Blanco to Humbug Mountain, state water off Elk River; 2 salmon per except coho; not more than 6 salmon may be retained in 7 consecutive days; 40 salmon annual limit. Minimum size 20" chinook Single point barbless hooks.
1988	10/1 - 31	Bird Island to OR/CA Border east of 124 ⁰ 20'w, state waters off of Chetco River; 2 salmon per day except coho; not more than 6 salmon may be retained in 7 consecutive days; 40 salmon annual limit. Minimum size 20" chinook. Single point barbless hooks.
	5/1 - 27	Cape Falcon to Orford Reef Red Buoy inside the 27 fathom curve only; 2 salmon per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. Minimum size 20" chinook, 16" coho. Single point barbless hooks.
	5/28 - 9/11	Cape Falcon to Orford Reef Red Buoy; As above.
	5/28 - 7/9	Orford Reef Red Buoy to OR/CA border; 2 salmon per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. Minimum size 20". Single point barbless hooks.
	7/10 - 9/11	Orford Reef Red Buoy to OR/CA Border; As above except bag decreased to 1 salmon per day.
9/12 - 10/31	Twin Rocks to Pyramid Rock, state waters off Tillamook Bay; 2 salmon except coho per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. Barbed hooks are permitted. No minimum length.	

Appendix Table 6 continued

Year	Season	Regulations
1988 cont.	10/1 - 31	Orford Reef Red Buoy to Humbug Mountain, state waters off Elk River; 2 salmon except coho per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. Single point barbless hooks. No minimum length.
	11/1 - 30	Cape Blanco to Humbug Mountain, state waters off Elk River; as above.
1989	5/1 - 26	Cape Falcon to Orford Reef Red Buoy inside the 27 fathom curve; 2 salmon per day; not more than 6 salmon in 7 consecutive days; 40 salmon annual limit. Minimum size 20" chinook, 16" coho. Single point barbless hooks.
	5/27 - 7/27	Cape Falcon to Orford Reef Red Buoy, no fathom restriction. As above.
	7/28 - 8/20	Cape Falcon to Orford Reef Red Buoy. As above except salmon fishing closed Fridays and Saturdays.
	9/2 - 9/4	Cape Falcon to Orford Reef Red Buoy. As above except salmon fishing open every day.
	5/1 - 9/30	Orford Reef Red Buoy to Horse Mtn.; 2 salmon per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. Minimum size 20" for chinook and coho - none for pink. Single point barbless hooks.
	5/28 - 6/12	Cape Falcon to US/Canada border; 2 salmon except coho per day; 40 salmon annual limit. Open Sunday through Monday only from 0 to 6 miles. Columbia River Conservation Zone closed. Minimum size 24" for chinook, 16" coho, none for pink. Single point barbless hooks.
	6/26 - 8/17	Cape Falcon to Leadbetter Point; 2 salmon per day; 40 salmon annual limit. Open Sunday through Thursday only from 0 to 200 miles. Columbia River Conservation Zone closed. Minimum size 24" for chinook, 16" coho, none for pink. Single point barbless hooks.
	9/16 - 10/31	Twin Rocks to Pyramid Rock, state waters off Tillamook Bay; 2 salmon except coho per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. No minimum length. Barbed hooks permitted.
	10/1 - 11/30	Cape Blanco to Humbug Mtn.; 2 salmon except coho per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. Single point barbless hooks. No minimum length.

^a Federal waters (3-200 miles) closed to coho fishing effective September 1.

^b Federal waters closed August 26-September 20 for all species of salmon.

^c Federal waters closed to coho fishing on July 21, north of Cape Falcon and July 25 south of Cape Falcon.

^d Pacific Ocean between 45 degrees 38 minutes N. Latitude and 45 degrees 29 minutes 45 seconds N. latitude and seaward 3 miles.

Appendix Table 7. Summary of actual Oregon ocean recreational salmon fishing regulations for 1990^a.

Area and Season	Salmon Species	Actual Quota or Guideline(*)		Daily Limit and Special Restrictions ^b
		Chinook	Coho	
Leadbetter Point, WA to Cape Falcon 6/24-8/30 (50 days) Sunday through Thursday only 9/8-9 (2 days)	All	13,100*	122,500	Two salmon per day. Conservation Zone 1 (Columbia River mouth) is closed.
Cape Falcon to Humbug Mountain 5/1-27 (27 days) Within the 27 fathom curve. ^d 5/28-9/16 except 6/23-6/29 and 8/1-8/7 (98 days)	All	None	235,000	Two salmon per day, no more than 6 salmon in 7 consecutive days. As above.
Humbug Mountain to Horse Mountain, CA 5/1-9/9	All	as above	except coho quota not binding.	Two salmon per day; except 6/30 through 8/15 only one may be a chinook; not more than 6 fish in 7 consecutive days. Conservation Zone 2 (Klamath River mouth is closed 8/1-31).

^a In addition to these seasons, ODFW established a late season all-salmon-except coho fishery at the mouth of Tillamook Bay. Details of this season is provided in the text.

^b Inseason adjusted quotas are given in parenthesis.

^c Single point, single shank barbless hooks were required from U.S.-Canada border to Pt. Conception, CA. Minimum size limits were (1) 24 inches for chinook and 16 inches for coho north of Cape Falcon, OR; (2) 20 inches for chinook and 16 inches for coho from Cape Falcon to Humbug Mountain, OR; and (3) 20 inches for both chinook and coho south of Humbug Mountain.

^d The 27 fathom curve is defined as follows: Within an area bounded by a line from Cape Falcon to 45°46'N, 124°01'20"W (approximately 1.6 nautical miles west of Cape Falcon) to 45°04'15"N, 123°04'W (approximately 2.2 nautical miles northwest of Cascade Head) to 44°40'40"N, 129°09'15"W (approximately 3 nautical miles west of Yaquina Head) to 44°08'30"N, 124°12'W (approximately 3 nautical miles west of Heceta Head) to 43°40'15"N, 124°14'30"W (approximately 0.5 miles west of the Umpqua Whistle Buoy) to 43°31'30"N, 124°17'W (approximately 1.7 nautical miles west of the beach) to 43°15'15"N, 124°28'W (approximately 3 nautical miles west of the beach) to 43°01'30"N, 124°29'50"W (approximately 2 nautical miles west of Four Mile Creek) to 42°56'N, 124°33'10"W (approximately 2.4 nautical miles west of Floras Creek) to 42°50'N, 124°38'30"W (approximately 3.4 nautical miles west of Cape Blanco) to 42°40'30"N, 124°28'45"W (approximately 1.1 nautical miles west of Humbug Mountain) to Humbug Mountain.

Appendix Table 8. Oregon recreational effort in salmon angler trips by area and month for 1979-90.^a

Area	May	June	July	August	Sept.	Oct.	Nov.	Season ^b
<u>Columbia R</u>								
1979	800	5,000	14,800	19,700	2,900	-	-	43,300
1980	1,300	7,800	13,700	19,700	3,800	-	-	46,300
1981	1,000	4,900	14,100	20,100	4,600	-	-	44,700
1982	-	4,900	22,300	-	-	-	-	27,200
1983	-	2,700	12,900	11,500	3,800	-	-	30,900
1984	-	-	2,000	5,100	-	-	-	7,100
1985	-	600	7,800	11,600	-	-	-	20,000
1986	-	700	12,100	7,800	-	-	-	20,600
1987	-	600	8,500	8,000	-	-	-	17,100
1988	-	-	5,700	-	-	-	-	5,700
1989	100	1,200	9,200	9,200	-	-	-	19,800
1990	-	1,900	8,900	13,200	1,400	-	-	25,500
<u>Tillamook</u>								
1979	900	3,200	11,800	14,500	600	-	-	31,000
1980	400	8,500	17,300	18,100	3,600	-	-	47,800
1981	1,300	2,200	11,500	16,500	6,600	-	-	38,000
1982	100	2,700	21,800	-	-	-	-	24,600
1983	-	1,200	12,600	7,800	3,700	-	-	25,300
1984	-	-	11,800	10,800	1,200	-	-	23,800
1985	-	-	13,000	21,700	2,200	1,600 ^c	-	38,600
1986	0	1,900	13,000	3,000	-	-	-	17,900
1987	-	1,800	12,400	10,900	3,800	-	-	29,100
1988	300	2,100	9,600	13,800	2,400	-	-	33,200
1989	300	3,000	15,400	9,500	3,100	-	-	31,300
1990	100	1,200	12,000	16,300	6,000	-	-	33,500
<u>Newport</u>								
1979	2,000	8,200	33,200	28,700	200	-	-	72,400
1980	1,800	16,700	39,000	22,600	3,800	-	-	83,900
1981	2,300	8,200	27,600	31,700	7,500	-	-	77,300
1982	200	7,300	46,000	-	-	-	-	53,500
1983	-	3,600	22,800	10,900	5,200	-	-	42,600
1984	-	-	24,000	19,200	800	-	-	44,000
1985	-	-	24,300	44,400	1,800	-	-	70,600
1986	1,400	3,900	38,700	7,900	-	-	-	51,900
1987	-	5,200	40,000	23,200	8,600	-	-	76,900
1988	1,000	7,100	37,900	34,200	9,400	-	-	89,600
1989	900	17,200	37,500	22,800	4,300	-	-	82,800
1990	600	5,500	32,800	28,300	4,100	-	-	71,400
<u>Coos Bay</u>								
1979	4,800	21,500	42,900	25,200	300	-	-	94,700
1980	2,200	32,100	46,200	14,300	2,600	-	-	97,400
1981	6,600	13,900	35,200	22,700	5,500	-	-	83,900
1982	100	12,000	77,300	-	-	-	-	59,400
1983	-	14,200	36,900	13,600	6,900	-	-	71,600
1984	-	-	22,000	17,900	300	-	-	40,200
1985	-	-	33,100	29,200	1,200	-	-	63,500
1986	800	4,900	33,700	4,200	-	-	-	43,600
1987	-	3,900	40,600	12,800	5,200	-	-	62,500
1988	1,400	9,800	33,100	21,000	3,600	-	-	69,000
1989	800	16,200	33,900	13,600	2,100	-	-	66,600
1990	600	8,800	24,300	24,900	6,400	-	-	65,000

Appendix Table 8 continued

Area	May	June	July	August	Sept,	Oct,	Nov,	Season ^b
<u>Brookings</u>								
1979	300	4,900	27,100	18,500	3,300	5,000	900	59,900
1980	200	13,300	23,900	10,000	5,300	2,900	400	56,000
1981	2,700	16,500	23,700	19,300	2,300	2,300	300	67,100
1982	400	5,200	39,700	10,200	3,000	2,600	300	61,400
1983	800	9,800	22,700	11,200	6,100	5,000	100	55,700
1984	-	-	15,100	16,800	2,900	3,100	-	38,000
1985	4,600	-	28,500	19,300	2,600	4,000	-	59,000
1986	3,500	10,400	20,000	12,900	600	5,000	-	52,400
1987	2,300	10,000	29,000	15,200	7,100	5,900	--	69,400
1988	800	14,300	25,500	12,000	1,900	-	-	54,400
1989	3,100	15,700	26,600	14,600	6,200	-	-	66,100
1990	1,400	14,500	22,800	11,500	800	-	-	51,100
<u>All Areas</u>								
1979	8,900	42,800	129,800	106,700	7,300	5,000	900	301,300
1980	5,900	78,400	140,000	84,700	19,100	2,900	400	331,400
1981	13,800	45,700	112,200	110,300	26,400	2,300	300	311,000
1982	700	32,100	177,100	10,200	3,000	2,600	300	226,000
1983	800	31,500	108,000	55,100	25,500	5,000	100	226,000
1984	-	-	74,900	69,800	5,300	3,100	-	153,100
1985	4,600	600	106,800	126,200	7,800	5,600	-	251,600
1986	5,700	21,800	117,500	35,900	600	5,000	-	186,500
1987	2,300	21,500	130,500	62,900	24,700	5,900	-	255,000
1988	3,600	33,300	111,800	81,000	22,400	-	-	252,000
1989	5,200	53,400	122,600	69,600	15,700	-	-	266,600
1990	2,700	31,900	98,700	94,300	18,800	-	-	246,500

^a Columbia River area includes Astoria, Warrenton and Hammond; Tillamook area includes Garibaldi and Pacific City; Newport area includes Depoe Bay and Newport; Coos Bay area includes Florence, Winchester Bay and Coos Bay; Brookings area includes Gold Beach and Brookings.

^b By area and calendar month, Season totals may vary from summarized months due to rounding.

^c Only 600 were ocean only trips, Most were combination bay-ocean trips.

Appendix Table 9. Summary of Oregon recreational ocean salmon effort and catch by area, 1976-90.

Year	Area ^a					Total
	Columbia R.	Tillamook	Newport	Coos Bay	Brookings	
EFFORT (Salmon Angler Trips)^b						
1976	100,900	56,500	132,200	154,600	94,200	538,400
1977	60,500	57,500	92,200	113,000	81,200	404,500
1978	63,400	31,700	115,600	104,400	88,600	403,700
1979	43,300	31,000	72,400	94,700	59,900	301,300
1980	46,300	47,800	83,900	97,400	56,000	331,400
1981	44,700	38,000	77,300	83,900	67,100	311,000
1982	27,200	24,600	53,500	59,400	61,300	226,000
1983	30,900	25,300	42,600	71,600	55,700	226,000
1984	7,100	23,800	44,000	40,200	38,000	153,100
1985	20,200	38,500	70,600	63,500	59,000	251,600
1986	20,600	17,900	51,900	43,600	52,400	186,500
1987	17,100	29,100	76,900	62,500	69,400	255,000
1988	5,700	33,200	89,600	69,000	54,400	252,000
1989	19,800	31,300	82,800	66,600	66,100	266,600
1990 ^c	25,500	33,500	71,400	65,000	51,100	246,500
Chinook						
1976	44,600	2,300	4,600	14,600	13,200	79,300
1977	22,600	1,500	2,600	22,700	11,800	61,400
1978	7,900	800	2,100	4,800	7,300	22,800
1979	7,500	1,000	1,400	4,500	6,400	20,900
1980	5,500	1,600	1,800	5,300	4,800	19,000
1981	11,500	1,900	2,400	4,500	8,900	29,200
1982	8,200	1,400	3,500	10,100	15,500	38,700
1983	3,400	700	1,600	6,600	12,400	24,700
1984	<100	1,100	2,000	4,900	9,000	17,000
1985	3,600	2,600	4,100	9,500	36,100	55,900
1986	1,900	500	2,200	5,900	11,800	22,400
1987	4,000	3,500	6,400	18,900	25,800	58,600
1988	500	2,700	5,300	8,100	22,000	38,600
1989	1,500	900	1,800	6,700	21,300	32,100
1990 ^c	3,300	1,200	2,700	6,600	12,700	26,500
Coho						
1976	116,700	50,000	118,100	164,800	51,800	501,300
1977	55,300	15,600	34,000	76,300	14,000	195,300
1978	60,200	8,500	61,200	82,800	47,100	259,800
1979	38,000	9,400	36,300	79,000	18,200	180,800
1980	55,600	28,900	72,400	135,900	33,000	325,800
1981	54,300	17,700	61,900	57,600	8,300	199,800
1982	35,500	23,100	44,000	55,600	16,900	175,100
1983	37,200	8,800	21,800	62,700	16,300	146,900
1984	10,900	20,300	41,200	39,400	11,500	123,300
1985	31,000	31,000	61,900	51,200	7,400	182,500
1986	36,900	23,500	78,500	61,100	11,700	211,700
1987	25,300	16,300	64,400	54,000	17,500	117,400
1988	9,800	29,600	100,700	71,000	15,200	226,200
1989	34,200	30,100	101,800	86,200	33,000	272,200
1990 ^c	36,100	22,800	64,000	62,100	15,300	200,300

^a Columbia River area includes Astoria, Warrenton and Hammond; Tillamook area includes Garibaldi and Pacific City; Newport area includes Depoe Bay and Newport; Coos Bay area includes Florence, Winchester Bay and Coos Bay; Brookings area includes Gold Beach and Brookings.

^b 1976-1978 effort includes a small number of bottomfishing trips.

^c Preliminary

Appendix Table 10. Oregon ocean recreational chinook catch (number of fish) by catch area and month, 1979-90.

Area ^a	Chinook							Season ^b
	May	June	July	August	Sept.	Oct.	Nov.	
<u>Columbia River</u>								
1979	600	1,600	2,100	3,100	100	-	-	7,500
1980	100	1,200	1,400	2,500	400	-	-	5,500
1981	<50	400	3,200	6,700	1,200	-	-	11,500
1982	-	2,200	6,000	-	-	-	-	8,200
1983	-	1,000	1,600	500	200	-	-	3,400
1984	-	-	-	-	-	-	-	-
1985	-	<100	1,300	2,200	-	-	-	3,600
1986	-	<100	1,200	700	-	-	-	1,900
1987	-	200	2,000	1,800	-	-	-	4,000
1988	-	-	500	-	-	-	-	500
1989	<50	200	200	1,100	-	-	-	1,500
1990	-	100	900	2,200	100	-	-	3,300
<u>Tillamook</u>								
1979	<50	<50	600	300	<50	-	-	1,000 ^c
1980	<50	200	300	800	200	-	-	1,600 ^c
1981	<50	<50	600	900	400	-	-	1,900 ^c
1982	-	100	1,300	-	-	-	-	1,400
1983	-	<100	400	200	100	-	-	700
1984	-	-	600	500	<100	-	-	1,100
1985	-	-	1,100	1,400	<100	<100	-	2,600
1986	0	<50	200	200	-	-	-	500
1987	-	<100	800	2,000	600	-	-	3,500
1988	<50	100	300	1,300	1,000	-	-	2,700
1989	<50	100	300	400	<50	-	-	900
1990	0	<50	500	400	300	100	-	1,300
<u>Newport</u>								
1979	200	300	500	400	<50	-	-	1,400 ^d
1980	100	600	600	400	200	-	-	1,800 ^d
1981	<50	100	1,100	1,000	200	-	-	2,400 ^d
1982	-	600	2,900	-	-	-	-	3,500
1983	-	400	800	300	200	-	-	1,600
1984	-	-	1,100	900	100	-	-	2,000
1985	-	-	1,400	2,600	100	-	-	4,100
1986	100	100	1,800	100	-	-	-	2,200
1987	-	200	2,300	2,100	1,700	-	-	6,400
1988	100	800	2,200	1,700	500	-	-	5,300
1989	100	700	500	400	<50	-	-	1,800
1990	<50	300	1,400	800	200	-	-	2,700
<u>Coos Bay</u>								
1979	200	2,400	1,500	500	<50	-	-	4,500
1980	<50	1,400	2,700	700	200	-	-	5,300
1981	100	400	2,300	1,300	300	-	-	4,500
1982	<50	1,000	9,100	-	-	-	-	10,100
1983	-	1,300	2,400	1,100	1,700	-	-	6,600
1984	-	-	2,200	2,600	<100	-	-	4,900
1985	-	-	4,400	4,900	100	-	-	9,500
1986	<50	1,000	4,400	500	-	-	-	5,900
1987	-	900	10,600	4,500	2,800	-	-	18,900
1988	200	1,700	2,800	3,100	200	-	-	8,100
1989	100	1,700	4,300	600	<50	-	-	6,700
1990	<50	600	2,800	2,300	800	-	-	6,600

Appendix Table 10 continued.

Area ^a	Chinook							Season ^b
	May	June	July	August	Sept.	Oct.	Nov.	
<u>Brookings</u>								
1979	<50	300	2,100	3,400	<50	600	100	6,400
1980	<50	1,300	1,700	1,000	400	300	100	4,800
1981	500	2,200	3,200	2,600	100	300	<50	8,900
1982	<50	800	12,700	1,500	200	200	<50	15,500
1983	500	3,400	4,900	1,500	1,000	1,000	<50	12,400
1984	-	-	1,900	5,600	1,100	400	-	9,000
1985	2,500	-	23,000	9,700	400	600	-	36,100
1986	1,100	2,700	3,500	3,900	<50	600	-	11,800
1987	100	3,800	9,300	5,600	5,900	1,100	-	25,800
1988	100	12,400	6,500	2,800	200	-	-	22,000
1989	400	3,600	9,400	6,800	1,100	-	-	21,300
1990	400	4,600	6,500	1,200	<50	-	-	12,700
<u>All Areas</u>								
1979	1,000	4,600	6,700	7,700	200	600	100	20,900
1980	300	4,700	6,900	5,400	1,300	300	100	19,000
1981	700	3,100	10,300	12,500	2,200	300	<50	29,200
1982	<50	4,700	31,900	1,500	200	200	<50	38,700
1983	500	6,100	10,100	3,600	3,300	1,000	-	24,700
1984	-	-	5,800	9,600	1,200	400	-	17,000
1985	2,500	<100	31,400	20,800	600	600	-	55,900
1986	1,200	4,000	11,100	5,400	<50	600	-	22,400
1987	100	5,200	25,100	16,000	11,000	1,100	-	58,600
1988	400	15,000	12,400	8,900	2,000	-	-	38,600
1989	600	6,400	14,700	9,300	1,200	-	-	32,100
1990	400	5,700	12,100	6,900	1,400	100	-	26,500

^a Columbia River area includes Astoria, Warrenton and Hammond; Tillamook area includes Garibaldi and Pacific City; Newport area includes Depoe Bay and Newport; Coos Bay area includes Florence, Winchester Bay and Coos Bay; Brookings area includes Gold Beach and Brookings.

^b Individual monthly catches may not equal season total due to rounding. Season totals for individual catch areas for 1974-75 data may not equal the sum of combined months due to some effort/landings not identified by port of landing. "All Areas" summary includes unidentified data.

^c Includes Nehalem Bay

^d Includes Salmon and Siletz Rivers and Alsea Bay

Appendix Table 11. Oregon ocean recreational coho catch (number of fish) by catch area and month, 1979-90.

Area ^a	Coho						Season ^b
	May	June	July	August	Sept.	Oct.	
<u>Columbia R</u>							
1979	400	6,500	13,300	16,300	1,500	-	38,000
1980	1,800	17,300	19,800	15,600	1,200	-	55,600
1981	1,700	8,300	18,100	20,200	6,000	-	54,300
1982	-	5,300	30,200	-	-	-	35,500
1983	-	3,600	18,900	9,700	5,100	-	37,200
1984	-	-	3,600	7,300	-	-	10,900
1985	-	700	11,600	18,800	-	-	31,000
1986	-	1,300	21,500	14,000	-	-	36,900
1987	-	900	12,200	12,200	-	-	25,300
1988	-	-	9,800	-	-	-	9,800
1989	-	1,600	17,500	15,100	-	-	34,200
1990	-	3,500	14,700	16,600	1,300	-	36,100
<u>Tillamook</u>							
1979	100	1,100	2,600	5,600	<50	-	9,400 ^c
1980	100	7,100	10,800	10,300	600	-	28,900 ^c
1981	300	1,000	5,600	9,600	1,300	-	17,700
1982	-	1,300	21,800	-	-	-	23,100
1983	-	200	6,100	1,600	900	-	8,800
1984	-	-	9,300	10,600	500	-	20,300
1985	-	-	8,900	21,700	400	-	31,000
1986	0	3,300	15,200	5,000	-	-	23,500
1987	-	600	10,200	4,900	700	-	16,300
1988	100	1,800	8,000	14,100	5,700	-	29,641
1989	<50	3,400	19,600	6,900	100	-	30,100
1990	0	900	8,700	12,400	-	-	22,870
<u>Newport</u>							
1979	200	3,700	18,700	13,600	<50	-	36,300 ^d
1980	200	18,500	41,500	10,800	1,400	-	72,400 ^d
1981	400	6,300	20,700	30,500	7,000	-	61,900
1982	-	3,600	40,500	-	-	-	44,000
1983	-	600	13,500	4,300	3,500	-	21,800
1984	-	-	24,700	16,400	100	-	41,200
1985	-	-	14,900	45,700	1,400	-	61,900
1986	1,500	7,300	56,100	13,600	-	-	78,500
1987	-	1,300	42,500	14,300	6,300	-	64,400
1988	200	6,400	45,800	42,900	5,600	-	100,700
1989	800	24,000	47,100	29,300	600	-	101,800
1990	200	5,800	37,800	18,900	1,200	-	64,000
<u>Coos Bay</u>							
1979	4,900	22,700	16,700	14,600	<50	-	79,000
1980	3,800	53,600	70,600	7,100	800	-	135,900
1981	6,300	8,100	25,100	16,500	1,700	-	57,600
1982	-	12,200	43,400	-	-	-	55,600
1983	20,700	28,300	9,200	4,500	-	-	62,700
1984	-	-	19,600	19,700	100	-	39,400
1985	-	-	30,900	19,700	500	-	51,200
1986	1,000	7,700	46,300	6,000	-	-	61,100
1987	-	1,000	44,500	6,400	2,100	-	54,000
1988	100	10,700	42,100	17,200	1,000	-	71,000
1989	700	22,300	38,500	11,600	<50	-	73,100
1990	<50	12,200	23,600	23,200	2,100	-	61,800

Appendix Table 11 continued

Area ^a	Coho						Season ^b
	May	June	July	August	Sept.	Oct.	
<u>Brookings</u>							
1979	<50	1,600	14,500	2,100	-	-	18,200
1980	100	17,700	13,400	1,400	500	-	33,000
1981	500	2,600	1,400	3,800	<100	-	8,300
1982	<50	1,700	15,200	-	-	-	16,900
1983	500	4,900	8,900	1,600	500	-	16,300
1984	-	-	7,400	4,000	200	-	11,500
1985	<50	-	4,900	2,500	<50	-	7,400
1986	1,500	2,500	5,600	2,100	0	0	11,700
1987	1	500	12,400	3,100	1,400	<50	17,500
1988	<50	1,000	12,100	1,900	100	-	15,200
1989	200	4,200	20,300	7,500	800	-	33,000
1990	100	8,400	5,000	1,800	100	-	15,300
<u>All Areas</u>							
1979	5,700	35,600	85,800	52,200	1,600	-	180,800
1980	6,000	114,200	156,100	45,100	4,400	-	325,800
1981	9,200	26,300	70,800	80,600	12,900	-	200,600
1982	<50	24,100	151,000	-	-	-	175,100
1983	500	30,000	75,600	26,400	14,400	-	146,900
1984	-	-	64,600	57,900	900	-	123,300
1985	<50	700	71,100	108,300	2,300	-	182,500
1986	4,000	22,200	144,700	40,800	-	-	211,700
1987	<50	4,300	121,700	41,000	10,500	<50	177,400
1988	300	19,900	117,900	76,000	12,300	-	226,400
1989	1,600	55,700	143,000	70,400	1,500	-	272,200
1990	300	30,900	89,700	72,900	6,500	-	200,300

^a Columbia River area includes Astoria, Warrenton and Hammond; Tillamook area includes Garibaldi and Pacific City; Newport area includes Depoe Bay and Newport; Coos Bay area includes Florence, Winchester Bay and Coos Bay; Brookings area includes Gold Beach and Brookings.

^b Individual monthly catches may not equal season total due to rounding, Season totals for individual catch areas for 1974-1975 data may not equal the sum of combined months due to some effort/landings not identified by port of landing, "All Areas" summary includes unidentified data.

^c Includes Nehalem Bay.

^d Includes Salmon and Siletz Rivers and Alsea Bay.



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